

# PPC

Dear PPC Member,

August 11, 1981

Enclosed is a description of the work of Steven Jacobs (5358) who has written a dis-assembler for HP-41 ROM programs. Steve's format is 5½ inches in column width for "Journal" use, but I don't think that his small print will still be readable after reduction. Because of this his material is printed without reduction. The added margin space will be useful for notes. This is ROM LISTINGS II and includes the following:

- a. This letter - XROM Data Organization.
- b. Steve Jacobs' description of his dis-assembler listings
- c. Overview and partial 41 microprocessor assembly language instruction set.
- d. Sample page showing format of his dis-assembler output.

Steve has produced listings for the HP-41CV system ROMS (0:G, 1:F, 2:F), 82153A Wand (1:E), 82120A Card Reader (1:F), and ET-11966 Service Module (1:C). His format is compact and only requires 8 pages to list 4K of ROM. All six ROM's dis-assembled to date requires 48+ pages to list. The printing and mailing of this much material is expensive. The sample output is included so you can determine if you can really use this information. If you want the listings you can request them by sending a 9" X 12" envelope with your name and address on it with 6 ounces of postage in stamps attached. Be sure to mark the outside of the envelope with the notation: ROM LISTINGS IIIB in the lower left corner.

This material is being prepared just prior to the PPC Northwest Conference. Jim De Arras (4706) will give a presentation on assembly language programming and Tom Cadwallader (3502) will cover ROM Byte Jumping. You may want to obtain a copy (don't wait too long) of the conference proceedings (Jim's session is 5 pages, Tom's is 12 pages) from the sponsoring chapter coordinator. The cost is \$3.50 post paid within the U.S. (total 66 pages)

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Note: He will have about  
75 copies available on  
22 August 1981.

I will not pasteup my listings because Steve provides much more information. I hope to be able to compile a complete list of all the instructions using HP's syntax for the 'Journal'. When this is done (maybe Steve will do it, but I hope he has another printer available) I will publish it.

The conference will be the official 'public' release of this information. EPROM boxes should be demonstrated and orders taken ?? at the conference. Maybe there will even be a few to buy on the spot. When these boxes become available I expect the club to be able to buy a few EPROMs for circulation and copying. The HP Service Module and Jim's JIM ROM 1H (current version) will be the first. A local chapter member has already "printed" the instructions to go along with SM:IC.

As always it is difficult to get information of this type into a form for printing, etc. I have sent out many many envelopes that contained ROM LISTINGS I (about 125) and haven't received much back. Please put your experiences and experiments down on paper. I know you have something to contribute.

Happy Assembly Programming

*Richard Nelson*

Test →

## HP-41 XROM ORGANIZATION

4096 WORDS

The XROM Organization table was derived from information obtained from Tom Cadwallader (3502), Jim De Arras (4706), and others. It is an attempt to show how ROM's are organized and provide a partial roadmap for "reading ROM's". The left column is a simple numbering of the different types of data that may be found in a ROM and was intended to be used as a reference for a detailed explanation of each type. The order is typical, but not rigid.

Data Type	Word Address	Function	Remarks
D1	0	XROM Number.	
D2	1	Number of Functions in Catalog 2.	
D3	283	Address of ROM Name for CAT Purposes.	
D4	485	Catalog Label 1.	(Second ROM Function).
D4	687	Catalog Label 2.	
	:	:	
D4	1288129	Catalog Label 63 (Max.).	
D5	-	000 NULL	End of Catalog
D5	-	000 NULL	
D6	-	ROM ID-11 Char. Max.	12 Words Max. May be any-place in ROM.
D7	-	COPY MESSAGE 1 (Two words).	Number Registers and bytes to copy.
D8	-	First ROM Program file.	
D7	-	COPY Message 2.	
D8	-	Second ROM Program file.	
	:	:	
D9	4084	Interrupt: During PAUSE. 7 scanned entry points.	
D10	4085	Interrupt: After each program line.	
D11	4086	Interrupt: Awaken from deep sleep (1sa).	
D12	4087	Interrupt: Turn off by key or XEQ OFF.	
D13	4088	Interrupt: I/O Service flag set.	
D14	4089	Interrupt: Awaken by pressing ON key.	
D15	4090	Interrupt: IF "MEMORY LOST".	
D16	4091	ROM REVISION.	FOR DIAG. ROM USE.
	thru		
D17	4094		
D17	4095	- Check sum.	FOR DIAG. ROM USE.

## HP41C DIS-ASSEMBLER LISTINGS

These listings are the result of a project which began in about October of 1980. Armed with Jim De Arras' original article on bus interfacing for the 41C, I built a working interface between an HP41C and a PDP 11/34 minicomputer. This interface allows the computer to monitor the activity of the IBA and DATA lines of the HP41 during execution of keystrokes and user programs. The interface is a "listen-only" device; the computer is unable to control the calculator in any way.

The first ROM listings were obtained with this interface in Nov of 1981. These initial listings consisted of small patches of meaningless hex numbers. Not all words of the ROMs were directly accessible, since the computer can only access those words of microcode that are used by the calculator during normal operations. Many sections of code are used only under special circumstances, and so only 80% of the 41C internal ROMs was available for the earliest listings. Complete listings were obtained, early in July, with the help of a Diagnostic ROM (desirably loaned to me by Bill Kolby). This was possible because of the ability of the service module to verify the correctness of a ROM by computing checksums. Computing these checksums requires access to all locations of the ROM being tested, so it is nearly a better of having the PDP-11 watch for the microcode as the Diagnostic ROM recalls each word of microcode to add it in to the running checksum. Unfortunately, the service module is unable to access the internal ROM of the printer. As a result, I do not have listings for the printer ROM. Jim De Arras' ROM box has allowed him to obtain listings of the printer ROM. Special microcode programs for that purpose were written by Jim as soon as enough of the instructions were understood to allow some control over the machine.

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De-ciphering of the microcode was a joint effort by Jim and myself. The earliest known instructions were the various 'return from subroutine' instructions, followed closely by the global GOTO/EXECUTE instructions and the 'PC relative' jump instructions. After many hours of painstaking study (mostly wild guess-work), my own studies of the microcode came to an abrupt (but brief) halt due to my rather shallow understanding of the internal structure of the CPU. At this time I was groping through the microcode on my own, and although I knew only a few of the instructions, I did know where the main catalog tables were and had also stumbled across the location of the error messages. All I knew about the CPU at that time was that there was a 'C' register and that it appeared continuously on the DATA line of the bus. I called Jim to find out whatever I could about the CPU, and to my surprise he had resumed working on the microcode at about the same time that I did. Between us we knew about ten times as much as either of us did alone, and so this initial contact triggered an avalanche of new study. Progress was quite rapid as new pieces of the puzzle began to fall into place. After what must have been hundreds of hours of trial-and-error type detective work and enough long distance phone calls to justify a WATS line, we have been able to generate complete listings of all system ROMs and peripherals.

We decided early that it probably wouldn't be necessary to conform to HP's choice of Assembly Language mnemonics, since it appeared that HP had no plans to support microcode programs other than their own, and also because we didn't know what HP's mnemonics were for most of the instructions. No great pains were taken in choosing mnemonics for the instructions; we just chose whatever seemed reasonable at the time.

The enclosed description of the instructions set is intended only as a 'quick reference' and not as a complete description of the instructions. Although a more thorough treatment would have been in order, time did not permit it (I needed to mail this to Richard by yesterday).

The dis-assembler listings are organized in blocks of 256 words each. Each block is divided into 16 columns labelled 0 thru F, each column is 16 contiguous words of ROM. Each entry has the equivalent hex code for the instruction to the left of the appropriate mnemonic of the instruction. Words that are data rather than instructions are decoded into decimal and character forms for convenience, and words that are user-level HP41C

instructions are denoted by a 'U' appearing in the first column along with the appropriate HP41C function name. It should be noted that some subroutines calls in the ROMs require data to be passed to the subroutine that is being called. This data is often placed after the subroutine call, and is decoded as data rather than as an instruction. An example of this appears in the main system ROMs at location 0246; this is an X0 1C6C followed by the data word 02D. This subroutine places error messages into the display, and the error message is specified by the data word. In this case, the error message ending at location 1C2D is specified. This is the famous 'MEMORY LOST' that we have all seen more often than we would have liked.

Listed below are a few interesting areas of the main ROMs.

ADDRESS	PURPOSE
1027 - 1344	FUNCTION NAMES & ENTRY POINTS
1389 - 13FF	CAT 3 LIST
1400 - 14FF	HEX TABLE (WITH SOME CODE)
1500 - 159E	KEYBOARD DEFINITION TABLE
16F2 - 16FB	'TONE' DURATION TABLE
1C0F - 1C6A	ERROR MESSAGES
2C00 - 2COF	'SPECIAL' CHARACTERS

I would appreciate hearing from anyone finding errors in these dis-assembler listings. Every effort has been made to avoid errors in the listings, but a few have undoubtedly been missed.

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#### BRIEF OVERVIEW OF INTERNAL CPU REGISTERS

NAME		\$ OF BITS		DESCRIPTION
A		56		MAIN ARITHMETIC REGISTER
B		56		MAIN ARITHMETIC REGISTER
C		56		MAIN ARITHMETIC REGISTER ('DATA' OF BUS)
M		56		AUXILLARY STORAGE REGISTER (STO/RCL ONLY)
N		56		AUXILLARY STORAGE REGISTER (STO/RCL ONLY)
G		8		AUXILLARY STORAGE REGISTER (STO/RCL ONLY)
F		4		POINTER (POINTS TO DIGITS IN A,B,C)
Q		4		POINTER (NOTE 1)
PC		16		PROGRAM COUNTER (ADDRESSES MICROCODE)
ST		8		STATUS REGISTER (FLAGS 0 THRU 7)
T		8		'TONE' REGISTER (USED TO ACTIVATE BENDER)
KEY		8		KEY BUFFER. LOADED WHEN KEYS DEPRESSED

NOTE 1: POINTERS CAN BE SET AND TESTED, BUT ONLY ONE POINTER IS 'SELECTED' AT ANY ONE TIME. THE 'SELECTED' POINTER IS CALLED R. THE INSTRUCTIONS THAT SET AND TEST THE POINTER WORK WITH THE POINTER THAT WAS MOST RECENTLY SELECTED BY ON OF THE TWO 'POINTER SELECT' INSTRUCTIONS.

FLAGS

THERE ARE 14 INTERNAL SYSTEM FLAGS. EACH OF THESE MAY BE INDIVIDUALLY SET, CLEARED, OR TESTED. FLAGS 0 THRU 7 MAY BE LOADED, READ, OR EXCHANGED WITH THE EXPONENT OF THE 'C' REGISTER BY APPROPRIATE INSTRUCTIONS. THESE FLAGS AS A GROUP ARE CONSIDERED TO BE A REGISTER, CALLED 'ST' FOR 'STATUS'. THIS ST REGISTER MAY ALSO INTERACT WITH THE 'T' REGISTER, WHICH IS USED EXCLUSIVELY TO ACTIVATE THE ACOUSTIC BENDER.

SOME OF THESE SYSTEM FLAGS HAVE BEEN RESERVED FOR SPECIAL PURPOSES, AS SHOWN IN THE FOLLOWING TABLE.

DEDICATED FLAGS

FLAG	PURPOSE
13	PROGRAM RUNNING
12	PRIVATE PROGRAM
11	STACK LIFT ENABLE
10	PROGRAM POINTER IN ROM

CLASS 1 INSTRUCTIONS: ABSOLUTE GOTO/EXECUTE

FIRST WORD:	A7	A6	A5	A4	A3	A2	A1	A0	0	1
SECOND WORD:	A15	A14	A13	A12	A11	A10	A9	A8	G	C
	ADDRESS BITS				GOTO/XEQ			CONDITION		

TABLE 1: CLASS 1 INSTRUCTIONS

G	C	MNEMONIC	NOTES
0	0	?NC XQ	IF NO CARRY, EXECUTE SUBROUTINE
0	1	?C XQ	IF CARRY, EXECUTE SUBROUTINE
1	0	?NC GO	IF NO CARRY, GOTO ABSOLUTE ADDRESS
1	1	?C GO	IF CARRY, GOTO ABSOLUTE ADDRESS

NOTE: CARRY IS AUTOMATICALLY CLEARED AFTER ONE INSTRUCTION WHETHER TESTED OR NOT. thus ?NC XQ AND ?NC GO ARE OFTEN USED FOR UNCONDITIONAL BRANCHES.

EXAMPLE: ?NC XQ      IF NO CARRY, EXECUTE SUBROUTINE  
->0180                AT ADDRESS 0180 (HEX)

ALSO NOTE THAT SOME SUBROUTINE CALLS PASS ARGUMENTS VIA DATA WORDS FOLLOWING THE SUBROUTINE CALL.

CLASS 3 INSTRUCTIONS: PC RELATIVE JUMPS

D6	D5	D4	D3	D2	D1	D0	C	1	1
DISPLACEMENT							CONDITION		

TABLE 3: CLASS 3 INSTRUCTIONS

C	MNEMONIC	NOTES
0	JNC *sdd	JUMP IF NO CARRY
1	JC *sdd	JUMP IF CARRY

sdd = SIGNED DISPLACEMENT

EXAMPLES:      HEX CODE      MNEMONIC      NOTES  
 3F3            JNC    \*-02      JUMP BACK 2 WORDS (IF NO CARRY)  
 0EF            JC     \*+1D      JUMP FORWARD 1D (29) (IF CARRY)

CLASS 0 INSTRUCTIONS: MISCELLANEOUS

----- 0 0  
 P3 P2 P1 P0 I3 I2 I1 I0  
 \ \ / /  
 PARAMETER INSTRUCTION  
 BITS BITS

TABLE 0: CLASS 0 INSTRUCTIONS

I: 3 2 1 0	MNEMONIC	NOTES
0 0 0 0	NOF	NO OPERATION (OTHERS UNUSED)
0 0 0 1	CLRF f	CLEAR FLAG f (NOTE 1)
0 0 1 0	SETF f	SET FLAG f (NOTE 2)
0 0 1 1	?FSET f	SET CARRY IF FLAG f IS SET (NOTE 3)
0 1 0 0	LDR- d	LOAD DIGIT d INTO C AT PNTR (NOTE 4)
0 1 0 1	?R# f	SET CARRY IF POINTER # f (NOTE 5)
0 1 1 0	(MISC.)	SEE TABLE 0.6
0 1 1 1	R# f	SET SELECTED POINTER TO f (NOTE 6)
1 0 0 0	(MISC.)	SEE TABLE 0.8
1 0 0 1	SELP f	SELECT PERIPHERAL f (NOTE 7)
1 0 1 0	WRIT f	WRITE C TO RAM/DEVICE
1 0 1 1	?FI f	PERIPHERAL FLAG TEST
1 1 0 0	(MISC.)	SEE TABLE 0.C
1 1 0 1		UNUSED ???
1 1 1 0	READ f	READ TO C FROM RAM/DEVICE
1 1 1 1	RCR f	ROTATE C RIGHT f DIGITS

NOTE 1: EXCEPT 3C4 ST=0 CLEAR STATUS REGISTER  
 NOTE 2: EXCEPT 3C8 CLRKEY CLEAR KEY FLAG  
 NOTE 3: EXCEPT 3CC ?KEY SETS CARRY IF KEY FLAG SET  
 NOTE 4: ALSO DECREMENTS SELECTED POINTER AFTER LOADING  
 NOTE 5: EXCEPT 3D4 R=R-1 DECREMENT SELECTED POINTER  
 NOTE 6: EXCEPT 3DC R=R+1 INCREMENT SELECTED POINTER  
 NOTE 7: CPU IS DISABLED WHILE SPECIAL INSTRUCTIONS ARE USED

## PARAMETER DEFINITIONS

F: 3 2 1 0	d	f	r
0 0 0 0	0	3	0(T)
0 0 0 1	1	4	1(Z)
0 0 1 0	2	5	2(Y)
0 0 1 1	3	A(10)	3(X)
0 1 0 0	4	8	4(L)
0 1 0 1	5	6	5(M)
0 1 1 0	6	B(11)	6(N)
0 1 1 1	7	E(14)	7(O)
1 0 0 0	8	2	8(F)
1 0 0 1	9	9	9(Q)
1 0 1 0	A	7	10(+)
1 0 1 1	B	D(13)	11(a)
1 1 0 0	C	1	12(b)
1 1 0 1	D	C(12)	13(c)
1 1 1 0	E	0	14(d)
1 1 1 1	F	F(15)	15(e)

TABLE 0.6: MISC. CLASS 0 INSTRUCTIONS (TYPE 6)

HEX CODE	MNEMONIC	NOTES
018		UNUSED
058	G=C @R,+	PLACE 2 DIGITS OF C INTO G
098	C=G @R,+	PLACE G IN C AT R & R+1
0D8	C<>G @R,+	EXCHANGE G WITH 2 DIGITS OF C
118		UNUSED
158	H=C ALL	REPLACE H BY C
198	C=M ALL	REPLACE C BY M
1D8	C<>M ALL	EXCHANGE C AND M
218		UNUSED
258	T=ST	REPLACE 'TONE' REGISTER BY ST
298	ST=T	REPLACE ST BY 'TONE' REGISTER
2D8	ST<>T	EXCHANGE T AND ST (EACH ARE 8 BITS)
318		UNUSED
358	ST=C X	REPLACE ST BY EXPONENT OF C
398	C=ST X	REPLACE EXPONENT OF C BY ST
3D8	C<>ST X	EXCHANGE EXPONENT OF C AND ST

NOTE: ST (STATUS) CONSISTS OF FLAGS 0 THRU 7  
OTHER FLAGS MUST BE SET AND CLEARED INDIVIDUALLY

TABLE 0.8: MISC. CLASS 0 INSTRUCTIONS (TYPE 8)

HEX CODE	MNEMONIC	NOTES
020	XQ->GO	CONVERT XQ TO GO BY POPPING STK
060	POWOFF	PUT 41C IN STANDBY MODE (NOTE 1)
0A0	SLCT P	SELECT P AS WORKING POINTER (R)
0E0	SLCT Q	SELECT Q AS WORKING POINTER (R)
120	TP=Q	SET CARRY IF POINTERS ARE EQUAL
160	?LOWBAT	LOW BATTERY TEST (SET CARRY IF LOW BAT)
1A0	A=B=C=0	CLEAR REGISTERS A,B,C (ALL)
1E0	GOTO ADR	LOAD PC FROM ADR FIELD OF C
220	C=KEY KY	LOAD KY FIELD OF C FROM KEY BUFFER
260	SETHEX	PLACE CPU IN HEX MODE
2A0	SETDEC	PLACE CPU IN DECIMAL MODE
2E0	DSPOFF	TURN OFF DISPLAY
320	DSPTOG	TOGGLE DISPLAY MODE (ON <> OFF)
360	?C RTN	RETURN FROM SUB. IF CARRY SET
3A0	?NC RTN	RETURN FROM SUB. IF NO CARRY
3E0	I RTN	UNCONDITION RETURN

NOTE 1: DOES NOT TURN OFF DISPLAY

TABLE 0.C: MISC. CLASS 0 INSTRUCTIONS (TYPE C)

HEX CODE	MNEMONIC	NOTES
030		UNUSED??
070	N=C ALL	REPLACE N BY C (ALL)
0B0	C=N ALL	REPLACE C BY N
0F0	C<>N ALL	EXCHANGE C AND N
130	LDI S&X	LOAD NEXT 10-BIT WORD INTO C
170	PUSH ADR	PLACE ADR FIELD OF C ONTO STACK
1B0	POP ADR	POP STACK INTO ADR FIELD OF C
1F0		UNUSED ??
230	GOTO KEY	LOAD PC FROM KEY BUFFER
270	RAM SLCT	SET RAM ADDRESS
2B0		UNUSED??
2F0	WRITE DATA	WRITE C TO DEVICE/RAM (ALL 56 BITS)
330	FETCH S&X	USE ADR TO RETRIEVE ROM DATA
370	C=C OR A	LOGICAL 'OR' OF C AND A
3B0	C=C AND A	LOGICAL 'AND' OF C AND A
3F0	PRPH SLCT	SELECT PERIPHERAL SPECIFIED BY C (S&X)

CLASS 2 INSTRUCTIONS: ARITHMETIC/LOGICAL OPERATIONS

----- 1 0  
 I4 I3 I2 I1 I0 F2 F1 F0  
 \ \ / /  
 INSTRUCTION FIELD  
 BITS BITS

REGISTER C: -----  
 DIGIT: 13 12 11 10 9 8 7 6 5 4 3 2 1 0  
 FIELD: IMSI <----- M -----> IXSI X |  
 FIELD: | <- ADR -> |  
 FIELD: | KY |

TABLE 2: CLASS 2 INSTRUCTIONS

I: 4 3 2 1 0	MNEMONIC	NOTES
0 0 0 0 0	A=0	CLEAR REGISTER A
0 0 0 0 1	B=0	CLEAR REGISTER B
0 0 0 1 0	C=0	CLEAR REGISTER C
0 0 0 1 1	A<>B	EXCHANGE A AND B
0 0 1 0 0	B=A	REPLACE B BY A
0 0 1 0 1	A<>C	EXCHANGE A AND C
0 0 1 1 0	C=B	REPLACE C BY B
0 0 1 1 1	C<>B	EXCHANGE C AND B
0 1 0 0 0	A=C	REPLACE A BY C
0 1 0 0 1	A=A+B	ADD B INTO A
0 1 0 1 0	A=A+C	ADD C INTO A
0 1 0 1 1	A=A+1	INCREMENT A
0 1 1 0 0	A=A-B	SUBTRACT B FROM A
0 1 1 0 1	A=A-1	DECREMENT A
0 1 1 1 0	A=A-C	SUBTRACT C FROM A
0 1 1 1 1	C=C+C	DOUBLE C
1 0 0 0 0	C=C+A	ADD A INTO C
1 0 0 0 1	C=C+1	INCREMENT C
1 0 0 1 0	C=A-C	REPLACE C BY A-C
1 0 0 1 1	C=C-1	DECREMENT C
1 0 1 0 0	C=-C-C	TAKE ARITHMETIC COMPLEMENT
1 0 1 0 1	C=-C-1	TAKE 1'S OR 9'S COMPLEMENT
1 0 1 1 0	?B#0	SET CARRY IF B NON-ZERO
1 0 1 1 1	?C#0	SET CARRY IF C NON-ZERO
1 1 0 0 0	?A<C	SET CARRY IF A LESS THAN C
1 1 0 0 1	?A<B	SET CARRY IF A LESS THAN B
1 1 0 1 0	?A#0	SET CARRY IF A NON-ZERO
1 1 0 1 1	?A&C	SET CARRY IF A NOT EQUAL TO C
1 1 1 0 0	RSHFA	SHIFT A RIGHT ONE DIGIT
1 1 1 0 1	RSHFB	SHIFT B RIGHT ONE DIGIT
1 1 1 1 0	RSHFC	SHIFT C RIGHT ONE DIGIT
1 1 1 1 1	LSHFA	SHIFT A LEFT ONE DIGIT

NOTE: OPERATIONS TAKE PLACE AT SPECIFIED FIELD ONLY.  
 OPERATIONS CAN BE HEX OR BCD DEPENDING ON MODE  
 OF CPU. CPU MODE IS SET BY SETHX (260) AND  
 SETDEC (2A0).

## FIELD DEFINITIONS

F: 2 1 0	MNEMONIC	NOTES
0 0 0	@R	AT DIGIT SPECIFIED BY R
0 0 1	S&X	AT SIGN OF EXP. AND EXPONENT
0 1 0	R<-	UP TO POINTER (FROM RIGHT)
0 1 1	ALL	ALL 14 DIGITS
1 0 0	P-Q	BETWEEN POINTERS
1 0 1	XS	SIGN OF EXPONENT (DIGIT 2)
1 1 0	M	MANTISSA ONLY (DIGITS 3 TO 12)
1 1 1	MS	SIGN OF MANTISSA ONLY (DIG. 13)

NOTE: R DENOTES THE CURRENTLY SELECTED POINTER

00	BLOCK	HP41CV SYSTEM ROMS	0:6	DIS-ASSEMBLER LISTINGS	5-AUG-81	PPC	
0	1	2	3	4	5	6	7
201 ?NC GO	04C ?FSET 4	28C ?FSET 7	09E ->2766	01C R= 3	098 C=G ER,+	278 JNC \$-31	0B2 ->2CAF
006 ->0180	03B JNC \$+07	340 ?NC RTN	299 ?NC GO	023 JNC \$+04	01C R= 3	09B JNC \$+13	151 ?NC XQ
2B5 ?NC GO	31C R= 1	38D ?NC XQ	00A ->02A6	219 ?NC XQ	245 ?NC GO	2CB JNC \$-27	000 ->0054
006 ->01AD	042 C=0 ER	008 ->02E3	2B5 ?NC GO	008 ->02B6	002 ->0091	2C3 JNC \$-28	2E3 JNC \$-24
04E C=0 ALL	270 RAM SLCT	284 CLRF 7	096 ->25AD	0AE A>C ALL	28C ?FSET 7	113 JNC \$+22	10E A=C ALL
270 RAM SLCT	070 N=C ALL	39B JNC \$-0D	10D ?NC GO	35B ST=C X	340 ?NC RTN	0E3 JNC \$+1C	21C R= 2
0F8 READ 3(X)	038 READ 0(T)	276 C=C-1 XS	09E ->2743	2FC RCR 13	284 CLRF 7	0DB JNC \$+1B	350 LDRR- D
158 M=C ALL	04B JNC \$+09	276 C=C-1 XS	015 ?NC GO	058 G=C ER,+	011 ?NC XQ	14B JNC \$+29	316 ?AC XQ
398 C=ST X	04E A>C ALL	219 ?NC XQ	096 ->2505	1E2 C=C+C ER	000 ->0004	14J JNC \$+28	2B5 ?C GO
056 C=0 XS	378 READ 13(c)	008 ->0286	0BD ?NC GO	01B JNC \$+03	38D ?NC XQ	2CB JNC \$-27	023 ->08AD
284 CLRF 7	03C RCR 3	0AE A>C ALL	096 ->252F	1E2 C=C+C ER	008 ->02E3	23B JNC \$-39	011 ?NC XQ
3DB C>ST X	206 C=C+A S\$X	358 ST=C X	262 C=C-1 ER	137 JC \$+26	35B ST=C X	24J JNC \$-38	00C ->0304
14C ?FSET 6	070 N=C ALL	2FC RCR 13	262 C=C-1 ER	011 ?NC XQ	10C ?FSET 8	24B JNC \$-37	0AE A>C ALL
05B JNC \$+0B	1B9 ?NC XQ	058 G=C BR,+	3C4 RSHFC S\$X	000 ->0004	340 ?NC RTN	253 JNC \$-36	10E A=C ALL
08C ?FSET 5	058 ->166E	0F3 JNC \$+1E	3CA RSHFC R-<	0EE C>B ALL	085 ?NC GO	25B JNC \$-35	093 JNC \$+12
04B JNC \$+09	0CE C=B ALL	199 ?NC GO	250 LDRR- 9	35C R= 12	0A2 ->282D	2BD ?NC GO	3C4 ST=0

00 BLOCK

B	9	A	B	C	D	E	F
083 JNC \$+10	07C RCR 4	3EB JNC \$-03	0EE C<>B ALL	3A8 WRIT 14(d)	0D3 JNC \$+1A	17C RCR 6	188 SETF 11
070 N=C ALL 130 LDI S&X	3E0 RTN	1CB JNC \$+39	183 JNC \$+30	3B8 READ 14(d)	358 ST=C X	260 SETHEX	
1FA C=>C H 014 20 T	3D5 ?NC XQ	0A5 ?NC XQ	3B5 ?NC XQ	17C RCR 6	28C ?FSET 7	0A0 SLCT P	
170 PUSH ADR 27C RCR 9	088 ->22F5	050 ->1429	1BC ->6FED	358 ST=C X	2C3 JNC \$-28	04E C=0 ALL	
240 SETDEC 330 FETCH S&X	04F 79 0	0AE A<>C ALL	184 CLRF 11	28C ?FSET 7	078 READ 1(Z)	270 RAM SLCT	
033 JNC \$+06	050 LD@R- 1	0A5 ?NC XQ	3B8 READ 14(d)	163 JNC \$+2C	333 JNC \$-1A	048 WRIT 2(Y)	3B8 READ 14(d)
0F0 C<>N ALL 1BC RCR 11	050 ->1429	17C RCR 6	24C ?FSET 9	0A3 JNC \$+14	04E C=0 ALL	358 ST=C X	
0B8 READ 2(Y) 1E0 GOTO ADR	0F0 C<>N ALL	3B8 ST=C X	261 ?NC XQ	180 POP ADR	270 RAM SLCT	160 ?LOWBAT	
10E A=C ALL 3C8 CLRKEY	0D4 PR= 10	0AE A<>C ALL	000 ->0998	170 PUSH ADR	038 READ 0(T)	043 JNC \$+08	
361 ?NC XQ 3CC ?KEY	04F JC \$+09	28C ?FSET 7	143 JNC \$+28	3E0 RTN	068 WRIT 1(Z)	14C ?FSET 6	
050 ->14D8 3F7 JC \$-02	0A5 ?NC XQ	3A7 JC \$-0C	013 JNC \$+02	0A5 ?NC XQ	0F8 READ 3(X)	037 JC \$+06	
0F8 READ 3(X) 130 LDI S&X	050 ->1429	14C ?FSET 6	000 NOP	050 ->1429	128 WRIT 4(L)	148 SETF 6	
365 ?NC XQ 008 8 H	0D4 PR= 10	333 JNC \$-1A	0M5 ?NC XQ	0EE C<>B ALL	0EE C<>B ALL	0ED ?NC XQ	
050 ->14D9 3C8 CLRKEY	03F JC \$+07	144 CLRF 6	050 ->1429	0D4 PR= 10	0E8 WRIT 3(X)	004 ->013B	
3C4 ST=0 3CC ?KEY	0A8 WRIT 2(Y)	398 C=ST X	0EE C<>B ALL	033 JNC \$+06	3B5 ?NC XQ	171 ?NC XQ	
0F0 C<>N ALL 266 C=>-1 S&X	0F0 C<>N ALL	13C RCR 8	0D4 PR= 10	3B8 READ 14(d)	18C ->6FED	01C ->075C	

01 BLOCK

0	1	2	3	4	5	6	7
2EC ?FI 13	366 ?AxC S&X	170 PUSH ADR	328 WRIT 12(b)	0A3 JNC \$+14	03B JNC \$+07	248 SETF 9	0F8 READ 3(X)
01F JC \$+03	321 ?MC GO	338 READ 12(b)	01C R= 3	083 JNC \$+10	03B READ 0(T)	171 ?NC X0	099 ?MC X0
20C ?FSET 2	046 ->11C8	0CC ?FSET 10	270 RAM SLCT	063 JNC \$+0C	07C RCR 4	01C ->075C	02C ->0B26
01B JNC \$+03	130 LDI S&X	097 JC \$+12	038 READ 0(T)	043 JNC \$+08	023 JNC \$+04	08C ?FSET 5	24C ?FSET 9
91 ?NC X0	087 135 G	104 CLRJ 8	11B JNC \$+23	023 JNC \$+04	038 READ 0(T)	07F JC \$+0F	03F JC \$+07
09C ->27E4	366 ?AxC S&X	262 C=C-1 ER	22E C=C+1 ALL	038 READ 0(T)	108 SETF 8	00C ?FSET 3	130 LDI S&X
2CC ?FSET 13	02F JC \$+05	047 JC \$+08	328 WRIT 12(b)	37C RCR 12	23C RCR 2	023 JNC \$+04	051 81 Q
19B JNC \$+33	211 ?NC X0	328 WRIT 12(b)	1BC RCR 11	083 JNC \$+10	38C ?FSET 0	189 ?NC X0	266 C=C-1 S&X
3CC ?KEY	00C ->0384	270 RAM SLCT	330 FETCH S&X	038 READ 0(T)	01B JNC \$+03	014 ->0562	3FB JNC \$-01
0A3 JNC \$+14	31D ?MC GO	07C RCR 4	0EB JNC \$+1D	0FC RCR 10	3AD ?NC X0	053 JNC \$+0A	261 ?MC X0
220 C=KEY KY	002 ->0C07	130 LDI S&X	133 JNC \$+26	06B JNC \$+0D	1BC ->0FEB	28C ?FSET 7	000 ->0098
03C RCR 3	3C8 CLRKEY	014 20 T	3B8 READ 14(d)	038 READ 0(T)	130 LDI S&X	02B JNC \$+05	044 CLRF 4
056 C=0 XS	3CC ?KEY	0FC RCR 10	398 C=ST X	13C RCR 8	006 6 F	104 CLRF 8	0ED ?NC X0
106 A=C S&X	05C R= 4	1E0 GOTO ADR	3A8 WRIT 14(d)	053 JNC \$+0A	270 RAM SLCT	041 ?NC X0	004 ->013B
130 LDI S&X	05A C=0 M	190 LDPR- 6	3E0 RTN	038 READ 0(T)	0FC RCR 10	190 ->C10	30C ?FSET 1
018 24 X	3D0 LDPR- F	266 C=C-1 S&X	000 NOP	17C RCR 6	1E0 GOTO ADR	023 JNC \$+04	0C7 JC \$+18

01 BLOCK

B	C	D	E	F
8	9	A	B	C
001 ?NC X0	3D9 ?NC X0	JB1 ?NC X0	3D5 ?NC X0	088 SETF 5
100 ->4000	01C ->07F6	09C ->27EC	00C ->03F5	046 CLR <sub>F</sub> 6
3D5 ?NC X0	060 POWOFF	1A6 A=C-1 S8X	284 CLR <sub>F</sub> 7	106 A=C S8X 399 ?NC X0
00C ->03F5	000 NOP	3CB JMC *-07 3CC ?KEY	3DB C>ST X	270 RAM SLCT 09C ->27E6
3CC ?KEY	171 ?NC X0	309 ?NC GO	130 LDI S8X	038 READ 0(T) 051 ?NC X0
10F JC *-21	01C ->075C	01E ->07C2	00A 10 J	084 ->2114
130 LDI S8X	2EB JMC *-23	220 C=KEY KY	399 ?NC X0	388 READ 14(d)
008 8 H	159 ?NC X0	01C R= 3	09C ->27E6	04B JMC *-09 04E C=0
399 ?NC X0	024 ->0956	01E2 C=C+CR	20C ?FSET 2	ALL ALL 18C RCR 11
09C ->27E6	130 LDI S8X	015 ?NC GO	2B8 CLR <sub>F</sub> 13	358 ST=C X
20C ?FSET 2	05C 92 \	032 ->0C05	378 READ 13(c)	38C ?FSET 0
3CF JC *-07	106 A=C S8X	321 ?NC GO	0EE C>B ALL	3C5 ?NC GO
3BB READ 14(d)	3CC ?KEY	3F1 ?NC X0	130 LDI S8X	002 ->00F1
	046 ->11C8	00C ->03FC	0FC RCR 10	384 CLR <sub>F</sub> 0
	04F JC *-09	001 ?NC X0	0BF 191 ?	398 C=ST X
	17C RCR 6	10E A=C ALL	056 C=0 XS 130 LDI S8X	03C RCR 3
	3DB C>ST X	146 A=A+1 S8X	130 LDI S8X 195 C	3AB WRIT 14(d)
358 ST=C X	100 ->4000	38B JMC *-0F	220 C=KEY KY	2E0 DSPOFF
20C ?FSET 3	00C 12 L	2E0 DSPOFF	326 ?A>B S8X	

## 02 BLOCK

0	1	2	3	4	5	6	7
36D ?NC XQ	366 ?A&C S&X	3B8 READ 14(d)	0BD ?NC GO	2C4 CLRF 13	04E C=0 ALL	03C RCR 3	29C R= 7
958 ->16DB	10F JC *+21	358 ST=C X	08E ->232F	344 CLRF 12	2F0 WRITE DATA	130 LDI S&X	090 LDR- 2
320 DSPTOG	1BC RCR 11	0CC ?FSET 10	260 SETHEX	184 CLRF 11	2E0 DSPOFF	0EE 238 n	310 LDR- C
309 ?NC GO	266 C=C-1 S&X	3A0 ?NC RTN	1A0 A=B=C=0	0C4 CLRF 10	320 DSPTOG	368 WRIT 13(c)	05C R= 4
01E ->07C2	270 RAM SLCT	338 READ 12(b)	158 M=C ALL	244 CLRF 9	3F0 PRPH SLCT	056 C=0 M	110 LDR- 4
7C8 CLRKEY	038 READ 0(T)	046 C=0 S&X	070 N=C ALL	104 CLRF 8	0AE A>C ALL	22E C=C+1 ALL	210 LDR- 8
3CC ?KEY	10E A=C ALL	1BC RCR 11	058 G=C ER,+	1B1 ?NC XQ	270 RAM SLCT	328 WRIT 12(b)	348 WRIT 14(d)
260 SETHEX	2BA C=C-1 M	330 FETCH S&X	358 ST=C X	070 ->1C6C	0AE A>C ALL	270 RAM SLCT	088 SETF 5
046 C=0 S&X	2F0 WRITE DATA	2E6 ?C#0 S&X	258 T=ST	02D 45	2F0 WRITE DATA	04E C=0 ALL	130 LDI S&X
3F0 PRPH SLCT	038 READ 0(T)	360 ?C RTN	170 PUSH ADR	3D9 ?NC XQ	1A6 A=A-1 S&X	09C R= 5	006 6 F
270 RAM SLCT	2BA C=C-1 M	0C4 CLRF 10	170 PUSH ADR	01C ->07F6	3DB JNC *-05	310 LDR- C	399 ?NC XQ
130 LDI S&X	36E ?A&C ALL	378 READ 13(c)	170 PUSH ADR	261 ?NC XQ	130 LDI S&X	09C ->27E6	130 LDI S&X
169 361 i	0B7 JC *+16	03C RCR 3	170 PUSH ADR	000 ->0098	0EF 239 0	020 32	169 361 i
106 A=C S&X	2F0 WRITE DATA	01C R= 3	0E0 SLCT 0	130 LDI S&X	13C RCR 8	348 WRIT 14(d)	106 A=C S&X
378 READ 13(c)	046 C=0 S&X	042 C=0 ER	2DC R= 13	3FF 1023 1	130 LDI S&X	04E C=0 ALL	106 A=C S&X
17C RCR 6	270 RAM SLCT	10A A=C R<-	0A0 SLCT P	10E A=C ALL	0FA 250 z	270 RAM SLCT	378 READ 13(c)

## 02 BLOCK

8	9	A	B	C	D	E	F
17C RCR 6	1BC RCR 11	04E C=0 ALL	1F6 C=C+C XS	00E ->03EC	0EE C>B ALL	3D5 ?NC XQ	047 JC *+08
0A6 A>C S&X	330 FETCH S&X	270 RAM SLCT	043 JNC *+08	0AE A>C ALL	04E C=0 ALL	088 ->22F5	108 SETF 8
13C RCR 8	0B6 A>C XS	3E0 RTN	248 SETF 9	08E B=A ALL	270 RAM SLCT	038 56 8	2FC RCR 13
368 WRIT 13(c)	106 A=C S&X	262 C=C-1 ER	1F6 C=C+C XS	130 LDI S&X	22E C=C+1 ALL	27E C=C-1 MS	146 A=A-1 S&X
310 ?NC GO	3E0 RTN	328 WRIT 12(b)	02B JNC *+05	01E 30	23C RCR 2	27E C=C-1 MS	027 JC *+04
096 ->01F5	10C ?FSET 8	3E0 RTN	1F6 C=C+C XS	1C6 A=A-C S&X	186 A=A-B S&X	389 ?C 60	2FC RCR 13
10E A=C ALL	068 JNC *+0D	219 ?NC XQ	360 ?C RTN	03F JC *+07	3F3 JNC *-02	053 ->14E2	146 A=A-1 S&X
2CC ?FSET 13	190 LDR- 6	008 ->0286	13D ?NC GO	24C ?FSET 9	013 JNC *+02	106 A=C S&X	34B JNC *-17
01F JC *+03	266 C=C-1 S&X	0AE A>C ALL	002 ->04F	0C3 JNC *+18	1EE C=C+C ALL	05E C=0 MS	23C RCR 2
04C ?FSET 4	328 WRIT 12(b)	358 ST=C X	056 C=0 XS	130 LDI S&X	166 A=A+1 S&X	104 CLRF 8	3ED ?NC XQ
3A0 ?NC RTN	270 RAM SLCT	21C R= 2	28C ?FSET 7	01A 26 Z	3F3 JNC *-02	046 C=0 S&X	008 ->02FB
338 READ 12(b)	038 READ 0(T)	058 G=C ER,+	033 JNC *+06	1C6 A=A-C S&X	0EE C>B ALL	270 RAM SLCT	1E6 C=C+C S&X
0CC ?FSET 10	37C RCR 12	1F6 C=C+C XS	284 CLRF 7	0A3 JNC *+14	3D8 READ 14(d)	356 ?A&0 XS	106 A=C S&X
043 JNC *+08	31C R= 1	2BD ?NC GO	011 ?NC XQ	06E A>B ALL	0AE A>C ALL	360 ?C RTN	1E6 C=C+C S&X
22E C=C+1 ALL	10A A=C R<-	0BE ->2FAF	000 ->0004	130 LDI S&X	13D ?NC GO	37C RCR 12	1E6 C=C+C S&X
378 WRIT 12(b)	01C R= 3	244 CLRF 9	3B1 ?NC GO	008 8 H	002 ->004F	1A6 A=A-1 S&X	146 A=A-1 S&X

## 03 BLOCK

0	1	2	3	4	5	6	7
046 C=0 S&X	0CC ?FSET 10	31C R= 1	01C R= 3	3E0 RTN	1BE A=A-1 MS	06E A>B ALL	1BC ->6FDB
2FC RCR 13	183 JNC *+30	0AE A>C ALL	053 JNC *+0A	244 CLRF 9	04F JC *+09	3B8 READ 14(d)	0CE C-B ALL
206 C=C+A S&X	338 READ 12(b)	23A C=C+1 M	0CE C=B ALL	1E2 C=C+C ER	158 M=C ALL	358 ST=C X	099 ?NC XQ
3E0 RTN	1BC RCR 11	330 FETCH S&X	23A C=C+1 M	033 JNC *+06	2E5 ?NC XQ	3E0 RTN	02C ->0B26
01C R= 3	23A C=C+1 M	0AE A>C ALL	330 FETCH S&X	149 ?NC XQ	0A4 ->29B9	365 ?NC XQ	1F9 ?NC XQ
08E B=A ALL	0EE C>B ALL	0AA A>C R<-	33C RCR 1	044 ->2952	3D8 C>ST X	1BC ->6FD9	00C ->037E
0CE C=B ALL	1E2 C=C+C ER	23C RCR 2	046 C=0 S&X	359 ?NC XQ	198 C=M ALL	28C ?FSET 7	38C ?FSET 0
2CC ?FSET 13	0DF JC *+1B	1BE A=A-1 MS	0FC RCR 10	044 ->29D6	3D8 C>ST X	01B JNC *+03	02F JC *+05
047 JC *+08	0CE C=B ALL	3CB JNC *-07	06E A>B ALL	01B JNC *+03	23C RCR 2	2CC ?FSET 13	13C RCR 8
04C ?FSET 4	330 FETCH S&X	013 JNC *+02	21A C=C+A M	149 ?NC XQ	3BB JNC *-09	360 ?NC RTN	358 ST=C X
037 JC *+03	08E B=A ALL	23C RCR 2	23A C=C+1 M	044 ->2952	325 ?NC XQ	104 CLRF 8	20C ?FSET 2
278 READ 9(Q)	11A A=C M	2EA ?C#0 R-<	03C RCR 3	2E5 ?NC XQ	050 ->14C9	248 SETF 9	167 JC *+2C
24C ?FSET 9	33C RCR 1	3F3 JNC *-02	0EA C>B R-<	044 ->2989	158 M=C ALL	041 ?NC XQ	245 ?NC XQ
017 JC *+02	27E C=C-1 MS	158 M=C ALL	338 READ 12(b)	33C RCR 1	01C R= 3	0B0 ->2C10	020 ->0899
158 M=C ALL	11E A=C MS	0AE A>C ALL	0CA C=B R-<	11E A=C MS	0DD ?NC XQ	033 JNC *+06	046 C=0 S&X
3E0 RTN	04E C=0 ALL	06E A>B ALL	328 WRIT 12(b)	04E C=0 ALL	0BC ->2337	36D ?NC XQ	270 RAM SLCT

## 03 BLOCK

P	Q	A	R	C	D	E	F
3B8 READ 14(d)	3B8 READ 14(d)	385 ?NC XQ	330 FETCH S&X	265 ?NC XQ	398 C=ST X	00C ->037E	00B ->02E0
358 ST=C X	358 ST=C X	1BC ->6FE1	2E6 ?C#0 S&X	020 ->0899	13C RCR 8	233 JNC *-3A	21C R= 2
088 SETF 5	17C RCR 6	239 ?NC XQ	11B JNC *+23	35D ?NC XQ	3A8 WRIT 14(d)	130 LDI S&X	098 C=G ER,+
003 JNC *+1A	3D8 C>ST X	00C ->038E	01C R= 3	1BC ->6FD7	31D ?NC GO	0A7 167	2B1 ?NC GO
2C4 CLRF 13	304 CLRF 1	104 CLRF 8	050 LDR- 1	165 ?NC XQ	002 ->00C7	3C8 CLRKEY	00A ->02AC
3B8 READ 14(d)	3D8 C>ST X	28C ?FSET 7	1BC RCR 11	01C ->0759	3B8 READ 14(d)	3CC ?KEY	130 LDI S&X
23C RCR 2	0FC RCR 10	1BB JNC *+37	0AE A>C ALL	04C ?FSET 4	358 ST=C X	2F9 ?NC GO	2FD 765 >
358 ST=C X	3D8 C>ST X	3B8 READ 14(d)	3C1 ?NC XQ	275 ?NC GO	084 CLRF 5	270 RAM SLCT	
304 CLRF 1	384 CLRF 0	358 ST=C X	0B0 ->2CF0	02E ->089D	398 C=ST X	266 C=C-1 S&X	3F0 PRPH SLCT
398 C=ST X	204 CLRF 2	304 CLRF 1	0AE A>C ALL	3B8 READ 14(d)	17C RCR 6	3DB JNC *-05	0B8 READ 2(Y)
37C RCR 12	3D8 C>ST X	0ED ?NC XQ	34D ?NC XQ	358 ST=C X	358 ST=C X	22D ?NC GO	015 ?NC GO
358 ST=C X	37C RCR 12	004 ->013P	014 ->05D3	088 SETF 5	304 CLRF 1	0AA ->2A8B	00A ->0205
304 CLRF 1	084 CLRF 5	2C4 CLRF 13	3DD ?NC XQ	398 C=ST X	3A3 JNC *-0C	38D ?NC XQ	046 C=0 S&X
02E JNC *+05	398 C=ST X	3E0 RTN	0AC ->2F7	17C RCR 6	041 ?NC XQ	008 ->02E3	3A8 WRIT 14(d)
149 ?NC XQ	3A8 WRIT 14(d)	1P0 POP ADR	149 ?NC XQ	358 ST=C X	0B0 ->2C10	2F6 ?C#0 XS	309 ?NC GO
024 ->0952	3E0 RTN	21A C=C+A M	024 ->0952	308 SETF 1	1F9 ?NC XQ	381 ?C GO	0BA ->2EC2

## 04 BLOCK

0	1	2	3	4	5	6	7
08B JNC \$+11 012 ->04F2	002 A=0 0R 065 ?NC GO	306 ?A<C S&X 01B JNC \$+03	106 A=C S&X 2DD ?NC XQ				
0A3 JNC \$+14 130 LDI S&X 086 B=A S&X 016 ->0519	106 A=C S&X 39C R= 0	129 ?C GO 130 LDI S&X 000 208 P	014 ->05B7	014 ->05B7	066 A>B S&X	014 ->05B7	
0AB JNC \$+15 0CF 207 0	31D ?NC XQ 002 A=0 0R	130 LDI S&X 0AE 174	046 A>C S&X	01B JNC \$+03	01B JNC \$+03	01B JNC \$+03	
0DB JNC \$+1B 1A6 A=A-1 S&X 014 ->05C7	31D ?NC XQ 014 ->05C7	130 LDI S&X 093 JNC \$+12	046 A>C S&X	046 A>C S&X	046 A>C S&X	046 A>C S&X	
0B3 JNC \$+16 063 JNC \$+0C	066 A>B S&X 014 ->05C7	306 ?A<C S&X 0AF JC \$+15	32B ?NC XQ 014 ->05CB				
0AB JNC \$+15 2B5 ?NC GO	384 CLRF 0 011 ?NC XQ	388 SETF 0 073 JNC \$+0E	014 ->05C7	014 ->05C7	014 ->05C7	014 ->05C7	
0A3 JNC \$+14 012 ->04AD	1E3 JNC \$+3C 0B4 ->2D04	0AF JC \$+15 073 JNC \$+0E	016 A=0 XS	016 A=0 XS	016 A=0 XS	016 A=0 XS	
09B JNC \$+13 130 LDI S&X 173 JNC \$+2E 01D ?NC XQ	173 JNC \$+2E 0B4 ->2D06	384 CLRF 7 019 ?NC XQ	130 LDI S&X 284 CLRF 7				
093 JNC \$+12 090 144 P	130 LDI S&X 0B4 ->2D07	3D8 C>ST X 014 ->05C7	09C 156 \ 3D8 C>ST X				
0FB JNC \$+1F 03B JNC \$+07	000 208 P 3D8 C>ST X	3D9 ?NC XQ 013 JNC \$+02	306 ?A<C S&X 0E6 C>B S&X				
1A3 JNC \$+34 31D ?NC XQ	343 JNC \$-18 284 CLRF 7	01C ->07F6 384 CLRF 0	01C ->05C7 384 CLRF 0	01C ->05C7 384 CLRF 0	01C ->05C7 384 CLRF 0	01C ->05C7 384 CLRF 0	
0F3 JNC \$+1E 014 ->05C7	343 JNC \$-18 284 CLRF 7	3D9 ?NC XQ 014 ->05C7	3D9 ?NC XQ 014 ->05C7	3D9 ?NC XQ 014 ->05C7	3D9 ?NC XQ 014 ->05C7	3D9 ?NC XQ 014 ->05C7	
103 JNC \$+20 209 ?NC GO	130 LDI S&X 3D8 C>ST X	023 JNC \$+04 009 9 I	01C ->07EF 009 9 I	01C ->07EF 009 9 I	01C ->07EF 009 9 I	01C ->07EF 009 9 I	
12B JNC \$+25 012 ->04B2	0CE 206 " 11B JNC \$+23	011 ?NC XQ 017 JC \$+04	01E A=0 MS	01E A=0 MS	01E A=0 MS	01E A=0 MS	
123 JNC \$+24 130 LDI S&X	306 ?A<C S&X 130 LDI S&X	130 LDI S&X 011 ?NC XQ	17E A=A+1 MS	17E A=A+1 MS	17E A=A+1 MS	17E A=A+1 MS	
3C9 ?NC GO	091 145 Q 163 JNC \$+2C 048 168 (	0EO 224 0B4 ->2D04	0EO 224 0B4 ->2D04	0EO 224 0B4 ->2D04	0EO 224 0B4 ->2D04	0EO 224 0B4 ->2D04	

## 04 BLOCK

8	9	A	B	C	D	E	F
3A1 ?NC XQ 0D3 JNC \$+1A 3E8 WRIT 15(e)	1CB JNC \$+39 3D8 C>ST X	0DO LDPR- 3 297 JC \$-2E	106 A=C S&X				
014 ->05EB 306 ?A<C S&X 30B JNC \$-1F 13B JMC \$+27	3E8 WRIT 15(e) 2E5 ?NC XQ	10C ?FSET 8 104 CLRF 8					
30C ?FSET 1 098 JNC \$+13 130 LDI S&X 065 101 e	01A 26 Z 226 C=C+1 S&X	014 ->05B9 02B JNC \$+05	204 CLRF 2				
3DD ?NC XQ 130 LDI S&X 065 101 e	306 ?A<C S&X 366 ?A<C S&X	011 ?NC XQ 130 LDI S&X	0CC ?FSET 10				
0AC ->2B77 071 113 g 3DB JNC \$-05 306 ?A<C S&X	373 JC \$+06 01F 31 -	014 ->2D04 013 JNC \$+02					
25D ?NC GO 246 C=A-C S&X 130 LDI S&X 0CF JC \$+19	06E A>B ALL 2E5 ?NC XQ	014 ->05B9 013 JNC \$+02					
01E ->0797 33C RCR 1 07A 122 z 366 ?A<C S&X	056 C=0 XS 014 ->05B9	208 SETF 2 31C R= 1					
130 LDI S&X 130 LDI S&X 246 C=A-C S&X 067 JC \$+0C	014 ->05B9 31C R= 1	209 ?NC GO 002 A=0 ER					
070 112 P 01A 26 Z 236 C=C+1 XS 3B8 READ 14(d)	130 LDI S&X 014 ->05B9 31C R= 1	012 ->04B2 0A6 A>C S&X					
30E ?A<C S&X 27E C=C-1 MS 3BB JNC \$-09 3D8 C>ST X	005 5 F 01C ->07F6 3E6 LSHFA S&X	0209 ?NC GO 002 A=0 ER					
0C7 JC \$+18 037 JC \$+06 130 LDI S&X 148 SETF 6 03B JMC \$+07 016 A=0 XS	3B9 ?NC XQ 01D 29 J 31D ?NC XQ 016 A=0 XS	056 C=0 XS 056 C=0 XS					
366 ?A<C S&X 266 C=C-1 S&X 068 104 h 15C R= 6 130 LDI S&X 01D 29 J 31D ?NC XQ 016 A=0 XS	106 A=C S&X 01D 29 J 31D ?NC XQ 016 A=0 XS	012 ->04B2 0A6 A>C S&X					
08B JNC \$+11 3E8 JNC \$-03 39B JNC \$-0D 0A2 A>C ER 02D 45 - 31C R= 1 014 ->05C7 11A A=C M	023 JNC \$+04 362 ?A<C ER 011 TNC XQ 014 ->05C7 11A A=C M	3D9 ?NC XQ 011 TNC XQ 014 ->05C7 11A A=C M					
130 LDI S&X 130 LDI S&X 130 LDI S&X 1E2 C=C+C ER 02D 45 - 31C R= 1 01F JC \$+03 0B4 ->2D04 01C ->07F6	023 JNC \$+04 362 ?A<C ER 011 TNC XQ 014 ->05C7 11A A=C M	3D9 ?NC XQ 011 TNC XQ 014 ->05C7 11A A=C M					
366 ?A<C S&X 246 C=A-C S&X 306 ?A<C S&X 288 SETF 7 31C R= 1 0306 ?A<C S&X 06E A>B ALL 3B8 READ 14(d)	306 ?A<C S&X 06E A>B ALL 3B8 READ 14(d)	306 ?A<C S&X 06E A>B ALL 3B8 READ 14(d)					

## 05 BLOCK

0	1	2	3	4	5	6	7
130 LDI S&X 106 A=C S&X 3D9 ?NC XQ	3C5 ?NC GO 130 LDI S&X 2E2 ?C90 0R	3E3 JNC \$-04 093 JNC \$+12					
107 263 G 3D9 ?NC XQ 01C ->07F6 012 ->04F1 044 68 D 013 JNC \$+02 244 CLRF 9	012 ->04F1 044 68 D 013 JNC \$+02 244 CLRF 9	3C1 ?NC XQ 0B0 ->2CF0					
3E8 WRIT 15(e) 01C ->07F6 31C R= 1 0AA A>C R- 3E8 WRIT 15(e) 3A8 WRIT 14(d) 104 CLRF 8	012 ->04F1 044 68 D 013 JNC \$+02 244 CLRF 9	01E A=0 MS 01E A=0 MS					
1BA A=A-1 H 046 A>C S&X 162 A=A+1 ER 262 C=C-1 ER 269 ?NC XQ 130 LDI S&X 3A8 WRIT 14(d) 149 ?NC XQ 014 ->05EB	012 ->04F1 044 68 D 013 JNC \$+02 244 CLRF 9	014 ->05EB 2C6 ?B80 S&X					
2EF JC \$-23 175 ?NC XQ 073 JNC \$+0E 358 ST=C X 014 ->059A 060 96 384 CLRF 0 3A1 ?NC XQ 014 ->05EB	012 ->04F1 044 68 D 013 JNC \$+02 244 CLRF 9	014 ->05EB 2C6 ?B80 S&X					
06E A>B ALL 080 ->2C5D 130 LDI S&X 130 LDI S&X 106 A=C S&X 3A8 WRIT 14(d) 149 ?NC XQ 014 ->05EB	012 ->04F1 044 68 D 013 JNC \$+02 244 CLRF 9	014 ->05EB 2C6 ?B80 S&X					
149 ?NC XQ 2E9 ?NC XQ 0CF 207 0 0C0 192 P 01E A=0 MS 320 DSPT06 024 ->0952 06F JC \$+0D	012 ->04F1 044 68 D 013 JNC \$+02 244 CLRF 9	014 ->05EB 2C6 ?B80 S&X					
024 ->0952 014 ->05BA 32D ?NC XQ 32D ?NC XQ 3D9 ?NC XQ 014 ->05EB	012 ->04F1 044 68 D 013 JNC \$+02 244 CLRF 9	014 ->05EB 2C6 ?B80 S&X					
01C R= 3 35B JNC \$-15 014 ->05CB 014 ->05CB 01C ->07F6 153 JNC \$+2A 0A8 ->2A8B 0CC ?FSET 10	012 ->04F1 044 68 D 013 JNC \$+02 244 CLRF 9	014 ->05EB 2C6 ?B80 S&X					
20C ?FSET 2 06E A>B ALL 149 ?NC XQ 0CC ?FSET 10 3A1 ?NC XQ 130 LDI S&X 106 A=C S&X 04F JC \$+09	012 ->04F1 044 68 D 013 JNC \$+02 244 CLRF 9	014 ->05EB 2C6 ?B80 S&X					
02D ?C XQ 33D ?NC XQ 024 ->0952 0EF JC \$+1D 014 ->05E8 0C8 200 H 086 B=A S&X 269 ?NC XQ 014 ->059A	012 ->04F1 044 68 D 013 JNC \$+02 244 CLRF 9	014 ->05EB 2C6 ?B80 S&X					
0B5 ->2D0B 064 ->29CF 06E A>B ALL 08C ?FSET 5 130 LDI S&X 248 SETF 9 34C ?FSET 12 014 ->059A	012 ->04F1 044 68 D 013 JNC \$+02 244 CLRF 9	014 ->05EB 2C6 ?B80 S&X					
20C ?FSET 2 01D ?NC XQ 33D ?NC XQ 0DB JMC \$+1B 020 32 3C8 CLRKEY 02B JMC \$+05 106 A=C S&X 01E A=0 MS	012 ->04F1 044 68 D 013 JNC \$+02 244 CLRF 9	014 ->05EB 2C6 ?B80 S&X					
2E5 ?NC XQ 0B4 ->2D07 0A4 ->29CF 2E0 DSPOFF 3E8 WRIT 15(e) 3F8 READ 15(e) 3C0 RTN 070 ->1C6B 01E A=0 MS 3D9 ?NC XQ 01C ->07F6	012 ->04F1 044 68 D 013 JNC \$+02 244 CLRF 9	014 ->05EB 2C6 ?B80 S&X					
0A4 ->29B9 08E B=A ALL 06E A>B ALL 3B8 READ 14(d) 3B8 READ 14(d) 39C R= 0 266 C=C-1 S&X 043 67 C 01C ->07F6	012 ->04F1 044 68 D 013 JNC \$+02 244 CLRF 9	014 ->05EB 2C6 ?B80 S&X					

## 05 BLOCK

8	9	A	B	C	D	E	F
3A1 ?NC XQ 2EA ?C90 R- 220 544 366 ?A<C S&X 3A8 WRIT 14(d) 01C R= 3	3D8 C>ST X 3E8 WRIT 15(e) 1EE C=C+C ALL						
014 ->05EB 3E3 JNC \$-04 149 ?NC XQ 01B JNC \$+03 056 C=0 XS 050 LDPR- 1	3E8 WRIT 15(e) 1EE C=C+C ALL						
209 ?NC GO 08E B=A ALL 024 ->0952 0AE A>C ALL 366 ?A<C S&X 1BC RCR 11 10C ?FSET 8 1EE C=C+C ALL	3E8 WRIT 15(e) 1EE C=C+C ALL						
012 ->04B2 056 C=0 XS 378 READ 13(c) 3A3 JNC \$-0C 3A0 ?NC RTN 108 SETF 8 38F JC \$-0F 1EE C=C+C ALL	3E8 WRIT 15(e) 1EE C=C+C ALL						
130 LDI S&X 106 A=C S&X 05A C=0 M 0AE A>C ALL 308 SETF 1 27A C=C-1 M 130 LDI S&X 3E6 LSHFA S&X	3E8 WRIT 15(e) 1EE C=C+C ALL						
020 32 23C RCR 2 10E A=C ALL 03C RCR 3 379 ?NC GO 330 FETCH S&X 020 32 3E8 WRIT 15(e) 23C RCR 2	3E8 WRIT 15(e) 1EE C=C+C ALL						
3E8 WRIT 15(e) 130 LDI S&X 043 JNC \$+08 3E0 RTN 0B2 ->2CDE 056 C=0 XS 3E8 WRIT 15(e) 23C RCR 2	3E8 WRIT 15(e) 1EE C=C+C ALL						
149 ?NC XQ 040 64 @ 266 C=C-1 S&X 130 LDI S&X 3D9 ?NC XQ 14C ?FSET 6 09E B=A NS 266 C=C-1 S&X	3E8 WRIT 15(e) 1EE C=C+C ALL						
024 ->0952 0FC RCR 10 10E A=C ALL 020 32 01C ->07F6 01B JNC \$+03 04E C=0 ALL 266 C=C+A S&X	3E8 WRIT 15(e) 1EE C=C+C ALL						
3B8 READ 14(d) 1E0 GOTO ADR 270 RAM SLCT 3E8 WRIT 15(e) 0A6 A>C S&X 01B JNC \$+03 04E C=0 ALL 266 C=C+A S&X	3E8 WRIT 15(e) 1EE C=C+C ALL						
10E A=C ALL 3BD ?NC XQ 038 READ 0(T) 057 JC \$+0A 23C RCR 2 144 CLRF 6 0A6 A>C S&X 01B JNC \$+03 04E C=0 ALL 266 C=C+A S&X	3E8 WRIT 15(e) 1EE C=C+C ALL						
141 ?NC XQ 01C ->07EF 2EE ?C90 ALL 057 JC \$+0A 23C RCR 2 144 CLRF 6 0A6 A>C S&X 01B JNC \$+03 04E C=0 ALL 266 C=C+A S&X	3E8 WRIT 15(e) 1EE C=C+C ALL						
0A4 ->2950 020 32 047 JC \$+08 130 LDI S&X 020 32 014 20 T 01B JNC \$+03 04E C=0 ALL 266 C=C+A S&X	3E8 WRIT 15(e) 1EE C=C+C ALL						
01D ?NC XQ 012 18 R 17A A=A+1 M 020 32 014 20 T 01B JNC \$+03 04E C=0 ALL 266 C=C+A S&X	3E8 WRIT 15(e) 1EE C=C+C ALL						
0B4 ->2D07 005 5 E 130 LDI S&X 106 A=C S&X 3F8 READ 15(e) 330 FETCH S&X 284 CLRF 7 266 C=C-1 S&X 006 A=0 S&X	3E8 WRIT 15(e) 1EE C=C+C ALL						
31C R= 1 007 7 G 0C0 192 @ 3F8 READ 15(e) 330 FETCH S&X 284 CLRF 7 266 C=C-1 S&X 006 A=0 S&X	3E8 WRIT 15(e) 1EE C=C+C ALL						

## 05 BLOCK

0	1	2	3	4	5	6	7
0AE A<C ALL 2FE ?C80 MS	39C R= 0 108 SETF 8	362 ?AC ER	3D5 ?NC XQ	0A0 SLCT P	330 FETCH S8X		
2FC RCR 13 05F JC *+0B	1BE A=A-1 MS 0AE A<C ALL	093 JNC *+12	07C ->IFF5	130 LDI S8X	276 C=C-1 XS		
22E C=C+1 ALL 2FC RCR 13	360 ?C RTN 158 M=C ALL	062 A>B ER	333 JNC *-1A	045 69 E	3EF JC *-03		
26E C-C-1 ALL 1BE A=A-1 MS	130 LDI S8X 2FE ?C80 MS	3E9 ?NC XQ	3E9 ?NC XQ	3D5 ?NC XQ	276 C=C-1 XS		
20E C=C+A ALL 043 JNC *+0B	003 3 C 3CD ?C XQ	07C ->IFFA	07C ->IFFA	07C ->IFF5	3DF JC *-05		
260 SETHEX 07E A>P MS	2FC RCR 13 07D ->IFF3	0E0 SLCT Q	0E0 SLCT Q	198 C=M ALL	276 C=C-1 XS		
2DE ?B#0 MS 09E B=A MS	3E8 WRIT 15(e) 0E0 SLCT Q	0C2 C-B ER	3D4 R=R-1	2F6 ?C00 XS	017 JC *+02		
077 JC *+0E 1BE A=A-1 MS	3D3 JNC *-06 35C R= 12	1E2 C=C+C ER	214 ?R= 2	3CD ?C XQ	348 SETF 12		
20C R= 13 01F JC *+03	046 C=0 S8X 0E0 SLCT Q	023 JNC *+04	303 JNC *-20	07D ->IFF3	03C RCR 3		
110 LDR- 4 33C RCR 1	270 RAM SLCT 2D4 ?R= 13	130 LDI S8X	10C ?FSET B	27B JNC *-31	10A A=C R-		
11E A=C MS 3EB JNC *-03	360 ?C RTN 02C 44	340 ?NC RTN	01C R= 3	3E0 RTN			
07C RCR 4 07E A>B MS	1ED ?NC XQ 0D0 LDR- 3	01B JNC *+03	31C R= 1	338 READ 12(b)	OCC ?FSET 10		
2FE ?C80 MS 33C RCR 1	028 ->067B 3DC R=R+1	130 LDI S8X	198 C=M ALL	1BC RCR 11	01B JNC *+03		
07F JC *+0F 11A A=C M	104 CLRF 8 062 A>B ER	02E 46 .	2E2 ?C80 ER	344 CLRF 12	0AA A>C R-		
2FC RCR 13 09E B=A MS	014 ?R= 3 302 ?AC ER	3D4 R=R-1	017 JC *+02	013 JNC *+02	373 JNC *-12		
1PE A=A-1 MS 2FC RCR 13	013 JNC *+02 0D7 JC *+1A	0A0 SLCT P	3D4 R=R-1	27A C=C-1 M	139 ?NC XQ		

## 06 BLOCK

8	9	A	B	C	D	E	F
098 ->224E	3E8 WRIT 15(e)	3D9 ?NC XQ	0D0 LDR- 3	10C ?FSET 8	306 ?AC S8X	OFC RCR 10	061 97 a
2E6 ?C80 S8X	115 ?NC XQ 01C ->07F6	226 C=C+1 S8X	01B JNC *+03	0F3 JNC *+1E	10E A=C ALL	306 ?AC S8X	
309 ?NC GO	038 ->0E45	37B JNC *-11	3E8 WRIT 15(e)	2E2 ?C00 ER	130 LDI S8X	066 A>B S8X	360 ?C RTN
052 ->14C2	000 NOP	130 LDI S8X	106 A=C S8X	017 JC *+02	025 37 Z	281 ?NC GO	130 LDI S8X
0D5 ?NC XQ	14C ?FSET 6	0C3 195 C	130 LDI S8X	222 C=C+1 ER	206 C=C+A S8X	03A ->0EA0	066 102 f
088 ->2235	073 JNC *+0E	10E A=C ALL	034 S2 4	3E8 WRIT 15(e)	2FC RCR 13	130 LDI S8X	306 ?AC S8X
23E C=C+1 MS	080 C=N ALL	220 C=KEY KY	104 CLRF 8	166 A=+1 S8X	0E6 C>B S8X	0CD 205 8	340 ?NC RTN
307 JC *-06	1E2 C=C+C ER	03C RCR 3	366 ?AC S8X	1F1 ?NC GO	31C R= 1	36A ?AC R-	130 LDI S8X
340 ?NC GO	02F JC *+05	30A ?AC R- 017 JC *+02	03A ->0E7C	10A A=C R-	02F JC *+05	01A 26 Z	
0A6 ->29I3	130 LDI S8X	023 JNC *+04	108 SETF 8	10E A=C ALL	130 LDI S8X	33C RCR 1	2DB JNC *-25
125 ?NC XQ	02D 45 -	265 ?NC XQ	0B0 C=N ALL	130 LDI S8X	01E 30 .	23E C=C+1 MS	0B0 C=N ALL
01C ->0749	3E8 WRIT 15(e)	020 ->0899	3C6 RSHFC S8X	041 65 A	36A ?AC R-	23E C=C+1 MS	33C RCR 1
309 ?NC XQ	013 JNC *+02	32B JNC *-1B	106 A=C S8X	306 ?AC S8X	023 JNC *+04	3A3 JNC *-0C	10E A=C ALL
01C ->07F6	3B8 READ 14(d)	04E C=0 ALL	3C6 RSHFC S8X	360 ?C RTN	266 C=C-1 S8X	066 A>B S8X	166 A=A+1 S8X
130 LDI S8X	395 ?NC XQ	220 C=KEY KY	31C R= 1	130 LDI S8X	36A ?AC R-	3E0 RTN	304 CLRF 1
020 32	07C ->1FE5	03C RCR 3	0D0 LDR- 3	04B 75 K	037 JC *+06	130 LDI S8X	201 ?NC XQ

## 07 BLOCK

0	1	2	3	4	5	6	7
0AC ->2B80	00C ?FSET 3	01C ->07E8	04E C=0 ALL	268 WRIT 9(0)	3D9 ?NC XQ	04E C=0 ALL	16E A=A+1 ALL
00C ?FSET 3	027 JC *+04	1F9 ?NC GO	070 N=C ALL	130 LDI S8X	01C ->07F6	3F0 PRPH SLCT	23C RCR 2
10F JC *+21	080 C=N ALL	03E ->0F7E	2E5 ?NC XQ	01E 30 .	178 READ 5(M)	270 RAM SLCT	358 ST=C X
01C R= 3	2B1 ?NC GO	158 M=C ALL	0A4 ->29B9	37C RCR 12	3D8 C>ST X	388 READ 14(d)	38C ?FSET 0
2E2 ?C80 ER	03E ->0FAC	39D ?NC XQ	3D8 C>ST X	3A1 ?NC XQ	284 CLRF 7	358 ST=C X	023 JNC *+04
02F JC *+05	208 SETF 2	1BC ->0F7E	0B0 C=N ALL	01C ->07E8	3D8 C>ST X	2CC ?FSET 13	130 LDI S8X
10E A=C ALL	18B JNC *+31	198 C=M ALL	3D8 C>ST X	204 CLRF 2	2F0 WRITE DATA	01F JC *+03	080 128 e
016 A=0 XS	3C1 ?NC XQ	01C R= 3	23C RCR 2	1F5 ?NC GO	149 ?NC GO	00C ?FSET 3	146 A=A+1 S8X
291 ?NC GO	0B0 ->2CF0	11D ?NC XQ	1BE A=A-1 MS	03E ->0F7D	026 ->0952	01B JNC *+03	04C ?FSET 4
03E ->0FA4	1B1 ?NC XQ	088 ->2247	3C3 JNC *-08	3B8 READ 14(d)	241 ?NC XQ	166 A=A+1 S8X	02F JC *+05
070 N=C ALL	0B0 ->2F6C	2FC RCR 13	325 ?NC XQ	33C RCR 1	00C ->0390	166 A=A+1 S8X	08C ?FSET 5
001 ?NC XQ	149 ?NC XQ	11E A=C MS	050 ->14C9	3D8 C>ST X	3AB WRIT 14(d)	14C ?FSET 6	023 JNC *+04
020 ->0800	024 ->0952	1BE A=A-1 MS	070 N=C ALL	044 CLRF 4	130 LDI S8X	017 JC *+02	176 A=A+1 XS
053 JNC *+0A	244 CLRF 9	1BE A=A-1 MS	046 C=0 S8X	3D8 C>ST X	080 128 e	016 A=0 XS	176 A=A+1 XS
0AE A>C ALL	0B0 C=N ALL	2DD ?NC XQ	270 RAM SLCT	2FC RCR 13	046 A>C S8X	28C ?FSET 7	176 A=A+1 XS
108 C=M ALL	3A1 ?NC XQ	0A4 ->29B7	0B0 C=N ALL	3AB WRIT 14(d)	3E6 LSHFA S8X	013 JNC *+02	0B0 RCR 5

## 07 BLOCK

8	9	A	B	C	D	E	F
358 ST=C X	010 16 F	2DD ?C GO	1B1 ?NC XQ	165 ?NC XQ	304 CLRF 1	002 ->00F0	330 FETCH S8X
38C ?FSET 0	270 RAM SLCT	02F ->0BB7	070 ->1C6C	01C ->0759	3B8 READ 14(d)	04E C=0 ALL	3E8 WRIT 15(e)
02B JNC *+05	130 LDI S8X	358 ST=C X	043 67 C	2C8 SETF 13	398 C>ST X	228 WRIT 8(P)	23A C=C+1 M
176 A=A+1 XS	0FD 253 }	00C ?FSET 3	04B JNC *+09	3F8 READ 15(e)	3AB WRIT 14(d)	1E8 WRIT 7(D)	2F6 ?C80 XS
176 A=A+1 XS	3F0 PRPH SLCT	02B JNC *+05	3F8 READ 15(e)	046 C=0 S8X	159 ?NC XQ	1A8 WRIT 6(N)	3E3 JNC *-04
176 A=A+1 XS	0AE A>C ALL	130 LDI S8X	2E6 ?C80 S8X	266 C=C-1 S8X	024 ->0956	098 C>G ER,+	1E0 GOTO ADR
176 A=A+1 XS	2F0 WRITE DATA	084 132 D	01F JC *+03	3E8 WRIT 15(e)	08C ?FSET 5	168 WRIT 5(M)	130 LDI S8X
0PC RCR 5	046 C=0 S8X	24D ?NC GO	226 C=C+1 S8X	3B8 READ 14(d)	047 JC *+08	3E0 RTN	010 16 F
056 C=0 XS	3F0 PRPH SLCT	032 ->0C93	3E8 WRIT 15(e)	358 ST=C X	3C1 ?NC XQ	2FC RCR 13	270 RAM SLCT
1EE C=C+C ALL	270 RAM SLCT	30C ?FSET 1	165 ?NC XQ	1F6 C=C+C XS	0B0 ->2CF0	05C R= 4	130 LDI S8X
33C RCR 1	3B8 READ 14(d)	3DF JC *-05	014 ->0559	1F6 C=C+C XS	130 LDI S8X	10A A=C R-	0FD 253 }
056 C=0 XS	358 ST=C Y	389 ?NC XQ	24C ?FSET 9	02B JNC *+05	02E 46 .	2B8 READ 10(+)	3F0 PRPH SLCT
1EE C=C+C ALL	JEC RTN	00C ->03E2	319 ?NC XQ	3D9 ?NC XQ	3AB WRIT 14(d)	0AA A>C R-	3E0 RTN
1EE C=C+C ALL	17C RCR 6	34C ?FSET 12	038 ->0EC6	1BC ->0F67	149 ?NC XQ	2AB WRIT 10(+)	000 NOP
14E A=A+C ALL	3D8 C>ST X	033 JNC *+06	37D ?NC XQ	241 ?NC XQ	024 ->0952	3E0 RTN	000 NOP
130 LDI S8X	30C ?FSET 1	104 CLRF 8	1BC ->0FDF	00C ->0390	3C1 ?NC GO	1B0 FOP ADR	000 NOP

## 08 BLOCK

0	1	2	3	4	5	6	7
05A C=0 M 330 FETCH \$IX	05A C=0 M 15A A=A+C M	310 LDOR- C	2FE ?C#0 MS	268 WRIT 9(Q)	04E C=0 ALL		
1EE C=C+C ALL 366 ?ABC \$IX	1BC RCR 11 21A C=C+1 M	180 POP ADR	2D0 LDOR- B	281 ?NC GO	26E C=C-1 ALL		
1EE C=C+C ALL 023 JNC \$+04	330 FETCH \$IX	23A C=C+1 M	013 JNC \$+02	022 ->08A0	056 C=0 XS		
2FC RCR 13 222 C=C+1 ER	1F6 C=C+C XS	1E0 60TO ADR	008 SETF 3	33C ?FSET 0	2DC R= 13		
3C6 RSHFC \$IX 3E3 JNC \$+04	1F6 C=C+C XS	27A C=C-1 M	01C R= 3	1AF JC \$+35	250 LDOR- 9		
1E6 C=C+C S\$X 3E0 RTN	23A C=C+1 M	2F3 JNC \$+22	278 READ 9(Q)	388 SETF 0	050 LDOR- 1		
1E6 C=C+C S\$X 23A C=C+1 M	23C RCR 2	104 CLRF 8	222 C=C+1 SR	0DB JNC \$+1B	008 SETF 3		
3C6 RSHFC \$IX OC6 C=B S\$X	358 ST=C X	238 READ 8(P)	193 JNC \$+32	01B JNC \$+03	278 READ 9(Q)		
03C RCR 3 10E A=C ALL	10E A=C ALL	3EE LSHFA ALL	3DC R=R+1	10E A=C ALL	178 JNC \$+2F		
106 A=C S\$X 330 FETCH \$IX	358 ST=C X	30C ?FSET 1	3EB JNC \$+03	30C ?FSET 1	05F JC \$+0B		
1BC RCR 11 226 C=C+1 S\$X	23C RCR 2	231 ?C GO	014 ?R= 3	2DC R= 13	10C ?FSET 8		
15C R= 6 306 ?A+C S\$X	35C R= 12	023 ->088C	265 ?C GO	090 LDOR- 2	00C ?FSET 3		
0EA C>B R-< 0C3 JNC \$+18	098 C=G ER,+	37E ?A+C MS	023 ->0899	31E ?A+C MS	01F JC \$+03		
05A C=0 M 046 A>C S\$X	2FE ?C#0 MS	0DB JNC \$+1B	38C ?FSET 0	16F JC \$+2D	0E3 JNC \$+1C		
150 LDOR- 5 1E6 C=C+C S\$X	31C R= 1	3EE LSHFA ALL	027 JC \$+04	308 SETF 1	20C ?FSET 2		
15C R= 6 17A A=A+1 M	10A A=C R-<	026 ->09A5	37E ?A+C MS	00C ?FSET 3	01F JC \$+38		
	03C RCR 3	2FC RCR 13	043 JNC \$+14	27E C=C-1 MS	1C7 JC \$+38		
			043 JNC \$+14	1C7 JC \$+38	01F JC \$+03		

## 09 BLOCK

8	9	A	B	C	D	E	F
208 SETF 2 04B JNC \$+09	3D4 R=R-1	108 SETF 8	08C ->23B2	024 ->0952	0AE A>C ALL	1BC RCR 11	
133 JNC \$+26 39C R= 0	000 NOP	013 JNC \$+02	289 ?NC GO	0DD ?NC XQ	39C R= 0	358 ST=C X	
204 CLRF 2 278 READ 9(Q)	098 C=G ER,+	104 CLRF 8	0B6 ->2DA2	020 ->0837	058 G=C ER,+	278 READ 9(Q)	
123 JNC \$+24 222 C=C+1 ER	102 A=C ER	04E C=0 ALL	18C ?FSET 11	179 ?NC XQ	363 JNC \$+14	10E A=C ALL	
278 READ 9(Q) 01B JNC \$+03	278 READ 9(Q)	26E C=C-1 ALL	385 ?C XQ	024 ->095E	06E A>B ALL	3D9 ?NC XQ	
10E A=C ALL 3DC R=R+1	042 A>C ER	056 C=0 XS	051 ->14ED	019 ?NC XQ	31D ?NC XQ	01C ->07F6	
056 C=0 XS 3EB JNC \$+03	268 WRIT 9(Q)	2DC R= 13	188 SETF 11	084 ->2D06	04A ->29C7	3E9 ?NC XQ	
21C R= 2 394 ?R= 0	238 READ 8(P)	290 LDOR- A	04E C=0 ALL	06A A>B R-<	0DD ?NC XQ	050 ->14FA	
356 ?A#0 XS 043 JNC \$+08	1BC RCR 11	268 WRIT 9(Q)	0E8 WRIT 3(X)	31C R= 1	08C ->2337	01C R= 3	
017 JC \$+02 2E0 DSPOFF	398 C-ST X	28D ?NC XQ	10C ?FSET 8	10A A=C R-<	3C1 ?NC GO	162 A=A+1 ER	
350 LDOR- D 130 LDI S\$X	03C RCR 3	088 ->2EA3	1BD ?NC GO	130 LDI S\$X	002 ->00F0	02B JNC \$+05	
0DB JNC \$+1B 0DO 208 P	228 WRIT 8(P)	3B8 READ 14(d)	0B6 ->2D77	01D 29	06E A>B ALL	262 C=C-1 ER	
37E ?A+C MS 266 C=C-1 S\$X	3E0 RTN	358 ST=C X	141 ?NC XQ	362 ?A+C ER	260 SETHEX	18E A=A-1 MS	
063 JNC \$+0C 3FB JNC \$+01	21C R= 2	00C ?FSET 3	044 ->2950	03F JC \$+07	01C R= 3	3DC R=R+1	
3EE LSHFA ALL 320 DSPTOG	0AE A>C ALL	02B JNC \$+05	08A B=A R-<	30A ?A+C R-<	3CB JNC \$+07	3DB JNC \$+05	
37E ?A+C MS 3E0 RTN	058 B=C ER,+	2C9 ?NC XQ	149 ?NC XQ	02B JNC \$+05	238 READ 8(P)	1A2 A=A-1 ER	

## 09 BLOCK

0	1	2	3	4	5	6	7
30C ?FSET 1 01B JNC \$+03	08C ?FSET 5	0BE A>C MS	023 JNC \$+04	04E C=0 ALL	222 C=C+1 ER	013 JNC \$+02	
047 JC \$+08 1D0 LDOR- 7	01B JNC \$+03	0E0 SLCT 0	004 A=0 R-<	0AB WRIT 2(Y)	01B JNC \$+03	286 C=0-C S\$X	
014 ?R= 3 013 JNC \$+02	3D0 LDOR- F	2DC R= 13	1A2 A=A-1 ER	046 C=0 S\$X	3DC R=R+1	10E A=C ALL	
037 JC \$+06 3D0 LDOR- F	013 JNC \$+02	0A0 SLCT P	050 LDOR- 1	3F0 PRPH SLCT	3EB JNC \$+03	2DC R= 13	
3D4 R=R-1 3DC R=R+1	1D0 LDOR- 7	276 C=C-1 XS	01C R= 3	270 RAM SLCT	262 C=C-1 ER	250 LDOR- 9	
1A2 A=A-1 ER 04C ?FSET 4	3DC R=R+1	30C ?FSET 1	3E0 RTN	3E0 RIN	106 A=C S\$X	0BE A>C MS	
050 LDOR- 1 09B JNC \$+13	39B JNC \$+0D	083 JNC \$+10	016 A=0 XS	3D9 ?NC XQ	056 C=0 XS	1DE A=A-C MS	
3DC R=R+1 2D4 ?R= 13	0BE A>C MS	31C R= 1	39C R= 0	01C ->07F6	39C R= 0	077 JC \$+0E	
3DC R=R+1 07F JC \$+0F	013 JNC \$+02	162 A=A+1 ER	3E0 RTN	178 READ 5(M)	162 A=A+1 ER	342 ?A#0	
38C ?FSET 0 11E A=C MS	11E A=C MS	047 JC \$+08	3D2 RSHFC P-Q	3D8 C>ST X	02B JNC \$+05	077 JC \$+0E	
05B JNC \$+0B 18E A=A-1 MS	18E A=A-1 MS	1A2 A=A-1 ER	3D2 RSHFC P-Q	308 SETF 1	3C6 RSHFC S\$X	3FA LSHFA M	
1BE A=A-1 MS 02F JC \$+05	05E C=0 MS	39C R= 0	068 WRIT 1(Z)	3D8 C>ST X	3DC R=R+1	1BE A=A-1 MS	
01F JC \$+03 354 ?R= 12	2DC R= 13	162 A=A+1 ER	0AE A>C ALL	2F0 WRITE DATA	214 ?R= 2	3E3 JNC \$+04	
3DC R=R+1 067 JC \$+0C	20C ?FSET 2	02F JC \$+05	3D2 RSHFC P-Q	3AB JNC \$+08	3DB JNC \$+05	1A6 A=A-1 S\$X	
3EB JNC \$+03 3DC R=R+1	013 JNC \$+02	1A2 A=A-1 ER	3D2 RSHFC P-Q	278 READ 9(Q)	2A0 SETDEC	342 ?A#0 ER	
08C ?FSET 5 3DB JNC \$+05	350 LDOR- D	222 C=C+1 ER	028 WRIT 0(T)	01C R= 3	356 ?A#0 XS	06F JC \$+0D	

## 09 BLOCK

8	9	A	B	C	D	E	F
27E C=C-1 MS 0AE A>C ALL	002 ->00C7	02B JNC \$+05	276 C=C-1 XS	384 CLRF 0	268 WRIT 9(Q)	0AA A>C R-<	
107 JC \$+20 30C ?FSET 1	04E C=0 ALL	262 C=C-1 ER	276 C=C-1 XS	083 JNC \$+10	29D ?NC GO	0AE A>C ALL	
1A6 A=A-1 S\$X 083 JNC \$+10	0E8 WRIT 3(X)	1BE A=A-1 MS	013 JNC \$+02	3B8 READ 14(d)	022 ->08A7	23C RCR 2	
3FA LSHFA M 045 ?NC XQ	260 SETHEX	3DC R=R+1	304 CLRF 1	358 ST=C X	244 CLRF 9	1A8 WRIT 6(N)	
3D3 JNC \$+06 050 ->1429	3E0 RTN	3DB JNC \$+05	056 C=0 XS	00C ?FSET 3	178 READ 5(M)	238 READ 8(P)	
01E A=0 MS 0E8 WRIT 3(X)	278 READ 9(Q)	30C ?FSET 1	0DB JNC \$+1B	02B JNC \$+05	31C R= 1	0AA A>C R-<	
3BB JNC \$+09 354 ?R= 12	0E0 SLCT 0	083 JNC \$+10	2D4 ?R= 13	241 ?NC XQ	18E ?C#0 R-<	0AE A>C ALL	
1BE A=A-1 MS 067 JC \$+0C	35C R= 12	214 ?R= 2	05F JC \$+0B	00C ->0390	131 ?NC GO	23C RCR 2	
027 JC \$+04 10C ?FSET 8	0AO SLCT P	047 JC \$+08	38C ?FSET 0	3FD ?NC GO	0B6 ->2D4C	1E8 WRIT 7(0)	
166 A=A+1 S\$X 3AD ?C GO	11E A=C MS	042 C=0 ER	02F JC \$+05	08A ->22FF	10E A=C ALL	238 READ 8(P)	
3EB JNC \$+03 023 ->08EB	30C ?FSET 1	2F2 ?C#0 P-Q	354 ?R= 12	04E C=0 ALL	1B8 READ 6(N)	17C RCR 6	
3E3 JNC \$+04 355 ?NC XQ	01B JNC \$+03	01F JC \$+03	03F JC \$+07	0E8 WRIT 3(X)	0AA A>C R-<	04A C=0 R-<	
01E A=0 MS 18C ->6FD5	39C R= 0	204 CLRF 2	23E C=C+1 MS	020 XQ->GO	0AE A>C ALL	0FC RCR 10	
20C ?FSET 2 241 ?NC XQ	013 JNC \$+02	004 CLRF 3	363 JNC \$+14	130 LDI S\$X	168 WRIT 5(M)	228 WRIT 8(P)	
013 JNC \$+02 00C ->0390	01C R= 3	3D0 LDOR- F	1BE A=A-1 MS	077 119 w	1FB READ 7(0)	2F8 ?C#0 MS	
1BE A=A-1 MS 31D ?NC GO	222 C=C+1 ER	108 JNC \$+21	353 JNC \$+16	3E0 RTN			

## OA BLOCK

0	1	2	3	4	5	6	7
138 JNC \$+27	144 CLR <sub>F</sub> 6	01C ->07F6	23C RCR 2	28C ?FSET 7	05B JNC \$+0B	356 ?A\$0 XS	284 CLR <sub>F</sub> 7
109 ?NC X0	284 CLR <sub>F</sub> 7	046 A>C S&X	358 ST=C X	063 JNC \$+0C	10E A=C ALL	3E3 JNC \$-04	076 A>B XS
088 ->2E42	308 C>ST X	3E8 WRIT 15(e)	106 A=C S&X	3DC R=R+1	00A A=0 R<	046 C=0 S&X	22B JNC \$-3B
388 READ 14(d)	106 A=C S&X	353 JNC \$-16	0F8 READ 3(X)	354 ?R= 12	106 A=C SLX	363 JNC \$-0C	10C ?FSET 8
3D8 C>ST X	130 LDI S&X	3D9 ?NC X0	104 CLR <sub>F</sub> 8	11F JC \$+23	31C R= 1	28C ?FSET 7	34B JNC \$-17
14C ?FSET 6	020 32	01C ->07F6	240 SETDEC	166 A=A+1 S&X	22A C=C+1 R<-	343 JNC \$-18	006 A=0 S&X
057 JC \$+0A	366 ?A\$C S&X	323 JNC \$-1C	096 B=A XS	3E3 JNC \$-04	04F JC \$+09	31B JNC \$-1D	39C R= 0
28C ?FSET 7	057 JC \$+0A	106 SETF 8	35C R= 12	033 JNC \$+06	00E A=0 ALL	166 A=A+1 S&X	1A2 A=A-1 BR
047 JC \$+08	046 C=0 S&X	041 ?NC X0	214 ?R= 2	3D4 R=R-1	17E A=A+1 MS	023 JNC \$+04	306 ?A\$C S&X
3D8 C>ST X	3F0 PRPH SLCT	080 ->2C10	127 JC \$+24	214 ?R= 2	38E RSHFA ALL	09A B=A M	38F JC \$-09
0DE C=B MS	270 RAM SLCT	0CE C=B ALL	3D4 R=R-1	14F JC \$+29	19C R= 11	13A A=A+B M	31B JNC \$-1D
23E C=C+1 MS	238 READ 8(P)	16D ?NC X0	186 A=A-1 XS	186 A=A-1 S&X	00A A=0 R<-	337 JC \$-1A	OEE C>B ALL
0FE C>B MS	056 C=0 XS	088 ->2E5B	3E3 JNC \$-04	3E3 JNC \$-04	08A A>C M	10C ?FSET 8	260 SETHEX
131 ?NC X0	366 ?A\$C S&X	319 ?NC GO	10E A=C ALL	02E B=0 ALL	260 SETHEX	01F JC \$+03	28D ?NC X0
088 ->2E4C	037 JC \$+06	002 ->00C6	2F6 ?C\$0 XS	08A B=A R<-	3E0 RTN	04E C=0 ALL	088 ->2E43
0F3 JNC \$+1E	3D9 ?NC X0	388 READ 14(d)	128 JNC \$+25	13A A=A+B M	0AE A>C ALL	373 JNC \$-12	OCE C=B ALL

## OA BLOCK

8	9	A	B	C	D	E	F
108 SETF 8	01B JNC \$+03	226 C=C+1 S&X	047 JC \$+08	3DC R=R+1	055 ?NC X0	106 A=C S&X	3D4 R=R-1
0D5 ?NC X0	2DC R= 13	3E3 JNC \$-04	1BE A=A-1 MS	2D4 ?R= 13	02C ->0B15	130 LDI S&X	1BE A=A-1 MS
028 ->0A35	350 LDR-& D	07B JNC \$+0F	3E3 JNC \$-04	2DC R= 13	04C ?FSET 4	003 3 C	3E3 JNC \$-04
0EE C>B ALL	28C ?FSET 7	266 C=C-1 S&X	3D4 R=R-1	040 SLCT P	075 ?C X0	356 ?A\$0 XS	01E A=0 MS
3E9 ?NC X0	375 ?NC GO	01F JC \$+03	214 ?R= 2	040 SLCT P	02D ->0B1D	02F JC \$+05	3D3 JNC \$-06
050 ->14FA	02A ->0ADD	3D4 R=R-1	01F JC \$+03	07E A>B MS	2F3 JNC \$-22	1C6 A=A-C S&X	075 ?NC X0
22E C=C+1 ALL	35C R= 12	3EB JNC \$-03	1A2 A=A-1 BR	083 JNC \$+10	1BE A=A-1 MS	3FB JNC \$-01	->0B1D
10E A=C ALL	2F6 ?C\$0 XS	046 C=0 S&X	3E3 JNC \$-04	0A2 A>C BR	1B6 A=A-1 XS	146 A=A-C S&X	3D4 R=R-1
2A0 SETDEC	05B JNC \$+0B	1BE A=A-1 MS	39C R= 0	08C ?FSET 5	04E A>C ALL	127 JC \$+24	214 ?R= 2
388 READ 14(d)	075 ?NC X0	13F JC \$+27	0E0 SLCT Q	01B JNC \$+03	260 SETHEX	146 A=A-C S&X	03F JC \$+07
0BC RCR 5	02C ->0B1D	075 ?NC X0	04C ?FSET 4	3D0 LDR- F	0EE C>B ALL	3FB JNC \$-01	1BE A=A-1 MS
0EE C>B ALL	055 ?NC X0	02C ->0B1D	043 JNC \$+08	013 JNC \$+02	25D ?NC GO	0C4 C=B S&X	3E3 JNC \$-04
07E AC>B MS	02C ->0B15	055 ?NC X0	07E A>B MS	1D0 LDR- 7	01E ->0797	206 C=0-C S&X	1A2 A=A-1 BR
0E6 C>B S&X	3D4 R=R-1	02C ->0B15	09E B=A MS	3DC R=R+1	35C R= 12	206 C=C+A S&X	3D4 R=R-1
0C6 C=B S&X	3D4 RSHFC M	3D4 R=R-1	1BE A=A-1 MS	042 A>C BR	14C ?FSET 6	146 A=A-1 S&X	214 ?R= 2
2F6 ?C\$0 MS	1BE A=A-1 MS	214 ?R= 2	047 JC \$+08	36B JNC \$-13	193 JNC \$+32	037 JC \$+06	3EB JNC \$-03

## OB BLOCK

0	1	2	3	4	5	6	7
2D6 ?B\$0 XS	2F3 JNC \$-22	1D0 LDR- 7	125 ?NC GO	106 A=C S&X	026 ->0952	146 A=A+C S&X	1BC RCR 11
01B JNC \$+03	006 A=0 S&X	013 JNC \$+02	026 ->0949	31C R= 1	3E8 WRIT 15(e)	01A A=0 M	202 C=C+A BR
21C R= 2	2F6 ?C\$0 XS	3D0 LDR- F	2DC R= 13	34A ?A\$0 R<-	3D3 JNC \$-06	0AE A>C ALL	1F6 C=C+C XS
350 LDR- D	2C7 JC \$-28	3DC R=R+1	310 LDR- C	3D3 JNC \$-06	04E C=0 ALL	1BC RCR 11	1F6 C=C+C XS
01C R= 3	30B JNC \$-1F	0A2 A>C BR	0FE C>B MS	16A A=A+1 R<-	066 A>B S&X	1FA C=C+C M	027 JC \$+04
0A6 A>C S&X	0E0 SLCT Q	3E0 RTN	2E0 DSPOFF	027 JC \$+04	146 A=A-1 S&X	21A C=C+A M	27C RCR 9
130 LDI S&X	2DC R= 13	0A0 SLCT P	2DC R= 13	175 ?NC X0	23A C=C+1 M	23A C=C+1 M	330 FETCH S&X
333 B19 3	120 ?P=Q	01E A=0 MS	3D0 LDR- F	080 ->2C5D	15C R= 6	110 LDR- 4	209 ?NC GO
0A6 A>C S&X	01F JC \$+03	17E A=A+1 MS	3D0 LDR- F	3AB JNC \$-0B	0E6 C>B S&X	00E ->03B6	37C RCR 12
0EO SLCT 0	3D4 R=R-1	37E ?A\$C MS	37C RCR 12	130 LDI S&X	15C R= 6	23A C=C+1 M	330 FETCH S&X
3D8 ?NC GO	3EB JNC \$-03	043 JNC \$+08	070 N=C ALL	020 32	222 C=C+1 BR	23C RCR 2	208 SETF 2
02A ->0AC3	0A0 SLCT P	1ED ?NC X0	3D9 ?NC X0	0DE C=B MS	355 ?C GO	00F ->03D5	0C6 C=B S&X
0C6 C=B S&X	3E0 RTN	028 ->0A7B	01C ->07F6	27E C=C-1 MS	23C RCR 2	319 ?NC X0	319 ?NC X0
0A6 A>C S&X	0A2 A>C BR	3D9 ?NC X0	080 C=N ALL	023 JNC \$+04	330 FETCH S&X	1C6 A=A-C S&X	0BC ->2FC6
1C6 A=A-C S&X	08C ?FSET 5	01C ->07F6	37C RCR 12	320 DSPTOG	31C R= 1	03C RCR 3	2F9 ?NC GO
0A6 A>C S&X	01B JNC \$+03	0EE C>B ALL	070 N=C ALL	149 ?NC GO	3DB JNC \$-05	042 A>C BR	00E ->03B6

## OB BLOCK

8	9	A	B	C	D	E	F
0AE A>C ALL	384 CLR <sub>F</sub> 0	3C0 ?KEY	0EE C>B ALL	2E6 ?C\$0 S&X	030 ->0C00	0A4 ->2927	0EE C>B ALL
358 ST=C X	0E6 C>B S&X	07B JNC \$+0F	266 C=C-1 S&X	287 JC \$-30	141 ?NC X0	38C ?FSET 0	0D4 ?R= 10
151 ?NC X0	0C6 C=B S&X	220 C=KEY KY	36B JNC \$-13	268 JNC \$-33	044 ->2950	01F JC \$+03	04B JNC \$+09
000 ->0054	07C RCR 4	03C RCR 3	2D3 JNC \$-26	01C R= 3	378 READ 13(c)	07C RCR 4	046 C=0 S&X
00E A=0 ALL	228 WRIT 8(P)	056 C=0 XS	3E5 ?NC X0	0C4 CLR <sub>F</sub> 10	190 LDR- 6	0AA A>C R<-	270 RAM SLCT
238 READ 8(P)	27E C=C-1 MS	106 A=C S&X	05C ->17F9	0E6 C>B S&X	01C R= 3	0B1 ?NC X0	3B8 READ 14(d)
09C R= 5	27E C=C-1 MS	39C R= 0	2BB JNC \$-29	266 C=C-1 S&X	38C ?FSET 0	08C ->232C	17C RCR 6
10A A=C R<-	167 27E C=C-1 MS	1E2 C=C+C BR	261 ?NC X0	266 C=C-1 S&X	047 JC \$+08	3C1 ?NC X0	358 ST=C X
398 C=ST X	27E C=C-1 MS	321 ?C GO	000 ->0098	04B JNC \$+09	36A ?A\$C R<-	0B0 ->2CF0	28C ?FSET 7
33C RCR 1	14D ?C GO	047 ->11CB	2A3 JNC \$-2C	309 ?NC X0	355 ?NC GO	304 CLR <sub>F</sub> 1	2ED ?NC GO
0B8 A>C MS	02F ->0B53	130 LDI S&X	3E5 ?NC X0	050 ->14C2	00E ->03D5	21D ?NC X0	002 ->00BB
0AE A>C ALL	20D ?NC GO	087 135 6	05C ->17F9	110 LDR- 4	34B ?NC X0	014 ->0587	0B0 C=N ALL
228 WRIT 8(P)	04E ->1383	366 ?A\$C S&X	388 SETF 0	384 CLR <sub>F</sub> 0	0A4 ->29D3	2F9 ?NC GO	270 RAM SLCT
238 READ 8(P)	130 LDI S&X	325 ?NC GO	238 READ 8(P)	01C R= 3	33D ?NC X0	00E ->03BE	0EE C>B ALL
0FC RCR 10	100 256 0	00E ->03C9	0FC RCR 10	0EE C>B ALL	0A4 ->29CF	0A5 ?NC X0	2F0 WRITE DATA
226 C=C+1 S&X	0EE C>B ALL	3C8 CLRKEY	266 C=C-1 S&X	001 ?NC X0	09D ?NC X0	050 ->1429	3E0 RTN

## OC BLOCK

0	1	2	3	4	5	6	7
04E C=0 ALL 000 NOP	023 JNC \$+04	330 FETCH S&X	020 32	17E A=A+1 MS	04C ?FSET 4	066 102	?
2E8 WRIT 11(a) 010 LDR- 0	130 LDI S&X	33C RCR 1	106 A=C S&X	360 ?C RTN	133 JNC \$+26	27E C=C-1	MS
328 WRIT 12(b) 05B JNC \$+08	080 128 P	1E6 C=C+C S&X	086 B=A S&X	1BE A=A-1 MS	205 ?NC XQ	067 JC	\$+0C
06A A>B R-<	050 LDR- 1	206 C=C+A S&X	1E6 C=C+C S&X	31C R= 1	180 POP ADR	39C R= 0	
0B3 JNC \$+16	04B JNC \$+09	070 N=C ALL	10E A=C ALL	388 READ 14(d)	23A C=C+1 M	2EE ?C\$0 ALL	
3B8 READ 14(d) 090 LDR- 2	08C ?FSET 5	39C R= 0	36A ?A\$C R-<	1E0 GOTO ADR	3E9 ?C GO	2D0 LDR- B	
3JC RCR 1	03B JNC \$+07	183 JNC \$+30	3F8 READ 15(e)	3F3 JNC \$-02	106 A=C S&X	2FE ?C\$0 MS	
358 ST=C X	3F3 JNC \$-02	0AE A>C ALL	03C RCR 3	1AA A=A-1 R-<	388 READ 14(d)	043 JNC \$+08	
1A0 A=B=C=0 0D0 LDR- 3	31C R= 1	058 G=C PR,+	36A ?A\$C R-<	358 ST=C X	358 ST=C X	1D0 LDR- 7	
220 C=KEY KY 023 JNC \$+04	1E2 C=C+C PR	142 A=A+C PR	037 JC \$+06	28C ?FSET 7	00C ?FSET 3	23E C=C+1 MS	
0BC RCR 5	0BD ?NC GO	0A6 A>C S&X	0C6 C=B S&X	023 JNC \$+04	01F JC \$+1B	1FE C=C+C MS	
130 LDI S&X	08E ->232F	1EE C=C+C ALL	358 ST=C X	3E8 WRIT 15(e)	130 LDI S&X	080 C=N ALL	053 JNC \$+0A
0C1 193 A 110 LDR- 4	1EE C=C+C ALL	244 CLRF 9	3A8 WRIT 14(d)	155 341 U	05A C=0 M	2FE ?C\$0 MS	
0FC RCR 10	33C RCR 1	2FC RCR 13	3D9 ?NC XQ	388 READ 14(d)	173 JNC \$+2E	23C RCR 2	047 JC \$+08
01C R= 3	106 A=C S&X	15C R= 6	01C ->07F6	3D3 JNC \$-06	106 A=C S&X	206 C=C+A S&X	
1E0 GOTO ADR	04C ?FSET 4	050 LDR- 1	130 LDI S&X	3F8 READ 15(e)	358 ST=C X	130 LDI S&X	158 M=C ALL

## OC BLOCK

8	9	A	B	C	D	E	F
10E A=C ALL 276 C=C-1 XS	39C R= 0	0E7 JC \$+1C	21D ?NC XQ	03C ->0FC7	23C RCR 2	037 ->0DD4	
0CD ?NC XQ 0B1 ?C XQ	058 G=C PR,+	3B8 READ 14(d)	010 ->0487	198 C=M ALL	358 ST=C X	00C ?FSET 3	
090 ->2433 0B5 ->2D2C	358 ST=C X	358 ST=C X	130 LDI S&X	34D ?NC XQ	004 CLRF 3	033 JNC \$+06	
2EE ?C\$0 ALL 18C RCR 11	0CE C=B ALL	3E0 RTN	0E0 224	014 ->05D3	3D8 C>ST X	0BD ?NC XQ	
187 JC \$+30 0EE C>B ALL	08C RCR 5	1D8 C>M ALL	39C R= 0	198 C=M ALL	39C R= 0	038 ->0E2F	
0B0 C=N ALL 2B8 READ 10(+)	130 LDI S&X	0A6 A>C S&X	058 G=C PR,+	27A C=C-1 M	042 A>C PR	265 ?NC XQ	
10E A=C ALL 05C R= 4	014 20 T	086 B=A S&X	18C RCR 11	330 FETCH S&X	098 C=G PR,+	020 ->0899	
3B8 READ 14(d) 0CA C=B R-<	27C RCR 9	125 ?NC XQ	10E A=C ALL	2F6 ?C\$0 XS	042 A>C PR	3A3 JNC \$-0C	
358 ST=C X 046 C=0 S&X	330 FETCH S&X	01C ->0749	066 A>B S&X	245 ?NC GO	058 G=C PR,+	20C ?FSET 2	
130 LDI S&X 2A8 WRIT 10(+)	01C R= 3	3C1 ?NC XQ	248 SETF 9	03A ->0E91	00C ?FSET 3	1B5 ?C GO	
150 336 P 00C ?FSET 3	050 LDR- 1	080 ->2CFO	23D ?NC GO	1F6 C=C+C XS	193 JNC \$+32	037 ->0D6D	
05E C=0 MS 02B JNC \$+05	18C RCR 11	130 LDI S&X	03A ->0E8F	1F6 C=C+C XS	121 ?NC XQ	14C ?FSET 6	
37C RCR 12 2E2 ?C\$0 PR	158 M=C ALL	0E0 224	214 CLRF 9	116 A=C XS	038 ->0E48	2C9 ?C GO	
206 C=C+A S&X 01B JNC \$+03	170 PUSH ADR	32D ?NC XQ	125 ?NC XQ	27A C=C-1 M	12B JNC \$+25	037 ->0DB2	
37C RCR 12 31C R= 1	330 FETCH S&X	014 ->05CB	01C ->0749	330 FETCH S&X	04C ?FSET 4	30C ?FSET 1	
330 FETCH S&X 222 C=C+1 PR	2E6 ?C\$0 S&X	304 CLRF 1	31D ?NC XQ	216 C=C+A XS	351 ?C GO	3B7 JC \$-0A	

## OD BLOCK

0	1	2	3	4	5	6	7
28C ?FSET 7 24D ?NC GO	115 ?NC XQ	383 JNC \$-10	020 ->0899	381 ?C XQ	1A6 A=A-1 S&X	03C RCR 3	
3CD ?C GO 032 ->0C93	038 ->0E45	08C ?FSET 5	343 JNC \$-0C	035 ->0DE0	1A6 A=A-1 S&X	10E A=C ALL	
037 ->0DF3 3C1 ?NC XQ	383 JNC \$-10	365 ?C GO	220 C=KEY KY	285 ?NC XQ	298 READ 10(+)	38C ?FSET 0	
38C ?FSET 0 0B0 ->2CF0	38C ?FSET 0	03B ->0E9D	03C RCR 3	020 ->0899	046 A>C S&X	047 JC \$+14	
38F JC \$-0F 171 ?NC XQ	06B JNC \$+0D	3D3 JNC \$-06	10A A=C R-<	3C3 JNC \$-08	248 WRIT 10(f)	130 LDI S&X	
35E ?A\$0 MS 01C ->075C	04C ?FSET 4	12D ?NC XQ	130 LDI S&X	3B8 READ 14(d)	103 JNC \$+20	0CD 205	
37B JNC \$-11 39D ?NC XQ	0F5 ?C GO	038 ->0E4B	083 131 C	2FB JNC \$-21	3B8 READ 14(d)	08C ?FSET 5	
130 LDI S&X 18C ->6FE7	03B ->0EJD	2D8 JNC \$-25	36A ?A\$C R-<	30C ?FSET 1	3F8 READ 15(e)	02F JC \$+05	
091 145 Q 211 ?NC XQ	00C ?FSET 3	04C ?FSET 4	07F JC \$+0F	33B JNC \$-19	3E8 WRIT 15(e)	3D9 ?NC XQ	
0AE A>C ALL 00C ->0384	0F5 ?C GO	341 ?C GO	130 LDI S&X	28C ?FSET 7	006 A=0 S&X	01C ->07F6	
2FC RCR 13 31D ?NC GO	03B ->0EJD	037 ->0DD0	031 49 1	067 JC \$+0C	1A6 A=A-1 S&X	3D5 ?NC GO	
39C R= 0 002 ->00C7	14C ?FSET 6	00C ?FSET 3	3E8 WRIT 15(e)	08C ?FSET 5	1F1 ?C GO	032 ->0CF5	
142 A=A+C PR 38C ?FSET 0	2C9 ?C GO	033 JNC \$+06	12D ?NC XQ	31B JNC \$-1D	03B ->0E7C	0AA A>C R-<	
25D ?NC XQ 01B JNC \$+03	037 ->0DB2	381 ?NC XQ	038 ->0E4B	149 ?NC XQ	149 ?NC XQ	0AE A>C ALL	
01C ->0797 30C ?FSET 1	265 ?NC XQ	034 ->0DE0	03B JNC \$+07	024 ->0952	024 ->0952	1BC RCR 11	
0AE A>C ALL 0B3 JNC \$+16	020 ->0899	265 ?NC XQ	00C ?FSET 3	006 A=0 S&X	2B8 READ 10(+)	2A8 WRIT 10(+)	

## OD BLOCK

8	9	A	B	C	D	E	F
098 C=G PR,+ 157 JC \$+2A	130 LDI S&X	0D5 ?NC GO	004 4 D	130 LDI S&X	0BE A>C MS	3E0 RTN	
358 ST=C X 11B JNC \$+23	001 1 A	036 ->0D35	220 544	030 48 0	2FC RCR 13	049 ?NC GO	
088 SETF 5 130 LDI S&X	0AA A>C R-<	149 ?NC XQ	121 ?NC XQ	3E8 WRIT 15(e)	0D0 LDR- 3	036 ->0D12	
398 C=ST X 01E 30	0AE A>C ALL	024 ->0952	038 ->0E4B	01B JNC \$+03	056 C=0 XS	3BD ?NC XQ	
058 G=C PR,+ 30C ?FSET 1	1BC RCR 11	39C R= 0	16B JNC \$+2D	130 LDI S&X	3E8 WRIT 15(e)	01C ->0EF	
365 ?NC GO 308 JNC \$-1F	2A8 WRIT 10(+)	098 C=G PR,+	04C ?FSET 4	030 48 0	121 ?NC XQ	013 19 S	
03A ->0ED9 266 C=C-1 S&X	3C1 ?NC XQ	3D8 C>ST X	077 JC \$+0E	35E ?A\$0 MS	038 ->0E4B	014 20 T	
14C ?FSET 6 28C ?FSET 7	0B0 ->2CFO	148 SETF 6	28C ?FSET 7	017 JC \$+02	043 JNC \$+08	220 544	
053 JNC \$+0A 2F3 JNC \$-22	130 LDI S&X	3D8 C>ST X	15F JC \$+2B	22E C=C+1 ALL	00C ?FSET 3	115 ?NC XQ	
130 LDI S&X 39C R= 0	0D0 208 P	058 G=C PR,+	00C ?FSET 3	3E8 WRIT 15(e)	01B JNC \$+03	038 ->0E45	
0AE 174 . 098 C=G PR,+	32D ?NC XQ	3D9 ?NC XQ	01B JNC \$+03	33C RCR 1	0BD ?NC XQ	3B8 JNC \$-09	
0AA A>C R-< 3D8 C>ST X	014 ->05CB	01C ->07F6	0BD ?NC XQ	0BE A>C MS	038 ->0E2F	130 LDI S&X	
0AE A>C ALL 044 CLRF 4	3A8 WRIT 14(d)	3B0 ?NC XQ	038 ->0E2F	2FC RCR 13	265 ?NC XQ	020 32	
1BC RCR 11 3D8 C>ST X	130 LDI S&X	01C ->07EF	265 ?NC XQ	3E8 WRIT 15(e)	020 ->0899	3A8 WRIT 14(d)	
2A8 WRIT 10(+) 058 G=C PR,+	060 96	009 9 I	020 ->0899	195 ?NC GO	3BB JNC \$-09	3A8 WRIT 14(d)	
30C ?FSET 1 31C R= 1	3E8 WRIT 15(e)	00E 14 N	39B JNC \$-0D	03A ->0E65	3B8 READ 14(d)	3A8 WRIT 14(d)	

OE BLOCK

0	1	2	3	4	5	6	7
36D ?NC XQ	098 C=G	BR,+ 29B JNC	8-2D 0BE A>C	MS 0DO LD8R- 3	3DD ?NC XQ	01C ->075B	042 C=0
97C ->1FDB	358 ST=C	X 130 LDI	SIX 2FC RCR	13 3EB WRIT 15(e)	0AC ->2BF7	261 ?NC XQ	056 C=0
2DC R= 13	28B READ	10(+)	057 87 W	31C R= 1 11B JNC	8+23 149 ?NC XQ	000 ->0998	146 A=>C
110 LD8R- 4	21C R= 2	1BE A=>A-1	MS 0DO LD8R- 3	3EB READ 14(d)	024 ->0952	211 ?NC GO	1BE A=A-1
10E A=C ALL	1DO LD8R- 7	35E ?A00	MS 3EB WRIT 15(e)	3EO RTN	3FB READ 15(e)	006 ->0184	047 JC *+08
130 LDI SIX	14C ?FSET	6 02B JNC	8+05 115 ?NC XQ	130 LDI	SIX 01C R= 3	2DC R= 13	046 A=>C
04C 76 L	01B JNC	8+03 226 C=>I	SIX 038 ->0E45	01F 31	- 098 C=G	3DO LD8R- F	1E6 C=>C
366 ?ABC SIX	21C R= 2	366 ?ABC	SIX 063 JNC	8+0C 043 JNC	8+08 3EB WRIT 15(e)	31C R= 1	106 A=C
0CF JC	8+19 3DO LD8R- F	JDF JC	8-05 00C ?FSET	3 130 LDI	SIX 3DB READ 14(d)	10E A=C ALL	1E6 C=>C
221 ?NC XQ	0AE A=>C	ALL 303 JNC	8-20 027 JC	8+04 01F 31	3JC RCR 1	3JB READ 14(d)	1E6 C=>C
0B0 ->2C88	37C RCR	12 130 LDI	SIX 265 ?NC XQ	023 JNC	8+04 358 ST=C	X 17E A=>A-1	146 A=>C
3DD ?NC XQ	0A2 A=>C	BR 054 84 T	020 ->0899	130 LDI	SIX 088 SETF	5 358 ST=C X	343 JNC 8-OC
0AC ->2BF7	281 ?NC GO	366 ?ABC	SIX 3CB JNC	8-07 01F 31	308 SETF	1 04C ?FSET	39C R= 0
149 ?NC XQ	03A ->0EA0	2E3 JNC	8-24 04E C=0	ALL 3EB WRIT 15(e)	398 C=ST	X 3E7 JC 8-04	098 C=G
024 ->0952	265 ?NC XQ	383 JNC	8-10 0BE A=>C	MS 3EB WRIT 15(e)	2FC RCR	13 006 A=0	SIX 358 ST=C X
39C R= 0	020 ->0899	04E C=0	ALL 2FC RCR	13 3EB WRIT 15(e)	16D ?NC XQ	3FB READ 15(e)	14C ?FSET 6

OE BLOCK

8	9	A	B	C	D	E	F
023 JNC \$+04	083 JNC \$+10	319 ?NC XQ	3D8 C>ST X	2FE ?C\$0 MS	1B1 ?NC XQ	3D8 C>ST X	01C ->0797
130 LDI \$8X	3DD ?NC XQ	038 ->0EC6	04C ?FSET 4	16D ?C 60	070 ->1C6C	3A8 WRIT 14(d)	284 CLRF 7
080 128 E	0AC ->2BF7	043 JNC \$+08	03B JNC \$+07	007 ->015B	03C 60 <	04E C=0 ALL	398 C=ST X
146 A=A+C	SIX 149 ?NC XQ	26D ?NC XQ	34C ?FSET 12	066 A>B S8X	130 LDI SIX	268 WRIT 9(0)	348 WRIT 14(d)
086 B=A	SIX 024 ->0952	000 ->009B	11F JC \$+23	245 ?NC GO	3E8 1000 h	3D9 ?NC XQ	049 ?NC GO
3DD ?NC XQ	2BB READ 10(+)	3C1 ?NC XQ	0AE A>C ALL	002 ->0091	266 C=C-1 SIX	01C ->07F6	036 ->0D12
0AC ->2BF7	10E A=C ALL	080 ->2CF0	0BC RCR 5	130 LDI S8X	3FB JNC \$-01	115 ?NC XQ	149 ?NC XQ
149 ?NC XQ	130 LDI SIX	320 DSPT06	3D1 ?NC 60	240 576 E	059 ?NC GO	038 ->0E45	024 ->0952
024 ->0952	0CB 200 H	149 ?NC XQ	0A6 ->29F4	1E6 C=C-H SIX	036 ->0D16	073 JNC \$+0E	278 READ 9(0)
2B8 READ 10(+)	2E0 DSPOFF	024 ->0952	3D8 C>ST X	3C8 CLRKEY	149 ?NC XQ	14C ?FSET 6	2EE ?C\$0 ALL
10E A=C	ALL 3C8 CLRKEY	395 ?NC XQ	04E C=0 ALL	3CC ?KEY	024 ->0952	0D1 ?NC GO	3AB JNC \$-0B
08C ?FSET 5	3CC ?KEY	1BC ->6FE5	05C R= 4	26D ?NC 60	3A5 ?NC XQ	03E ->0F34	37C RCR 12
0A7 JC \$+14	03B JNC \$+07	211 ?NC XQ	3D0 LDPR-F	002 ->009B	1BC ->6FE9	375 ?NC XQ	04A C=0 R-<
066 A>B	S8X 266 C=C-1 SIX	00C ->0384	170 PUSH ADR	266 C=C-1 SIX	3B8 READ 14(d)	072 ->1F05	268 WRIT 9(0)
086 B=A	S8X 3E3 JNC \$-04	39C R= 0	0AE A>C ALL	3DB JNC \$-05	3D8 C>ST X	3B3 JNC \$-0A	125 ?NC XQ
3E6 LSHFA	S8X 320 DSPT0G	098 C=G ER,+	0BC RCR 5	104 CLRF 8	288 SETF 7	25D ?NC XQ	01C ->0749

OF BLOCK

0	1	2	3	4	5	6	7
3D9 ?NC XQ	31C R= 1	333 JNC \$-1A	000 NOP	358 ST=C X	3DD ?NC XQ	36A ?A\$C R-<	2B8 READ 10(+)
01C ->07F6	130 LDI S\$X	278 READ 9(0)	000 NOP	284 CLRF 7	0AC ->2BF7	1CF JC \$+39	10E A=C ALL
3B8 READ 14(d)	07F 127 8	2EA ?C\$0 R-<	000 NOP	398 C=ST X	149 ?NC XQ	278 READ 9(0)	395 ?NC XQ
31B JNC \$-1D	36A ?A\$C R-<	31F JC \$-1D	000 NOP	16D ?NC XQ	024 ->0952	158 M=C ALL	1BC ->6F5
30C ?FSET 1	393 JNC \$-0E	0AA A<>C R-<	149 ?NC XQ	01C ->075B	278 READ 9(0)	315 ?NC XQ	211 ?NC XQ
1CB JNC \$+39	130 LDI S\$X	10A A=C R-<	024 ->0952	2B8 READ 10(+)	0E0 SLCT 0	098 ->26C5	00C ->0384
265 ?NC XQ	03A 58 :	23C RCR 2	08C ?FSET 5	03C RCR 3	2DC R= 13	2EE ?C\$0 ALL	381 ?NC GO
020 ->0899	36A ?A\$C R-<	268 WRIT 9(0)	293 JNC \$-2E	106 A=C S\$X	040 SLCT P	08F JC \$+11	00A ->02E0
2E3 JNC \$-24	373 JNC \$-12	0EE C<>B ALL	31C R= 1	130 LDI S\$X	21C R= 2	398 READ 14(d)	24C ?FSET 9
36D ?NC XQ	130 LDI S\$X	3D9 ?NC XQ	278 READ 9(0)	00F 15 0	2F2 ?C\$0 P-Q	358 ST=C X	137 JC \$+26
07C ->1FDB	02E 46 ,	01C ->07F6	2EE ?C\$0 ALL	36A ?A\$C R-<	325 ?NC XQ	3F8 READ 15(e)	158 M=C ALL
106 A=C S\$X	36A ?A\$C R-<	221 ?NC XQ	24B JNC \$-37	229 ?NC GO	018 ->06C9	03C RCR 3	07C RCR 4
125 ?NC XQ	353 JNC \$-16	080 ->2C88	325 ?NC XQ	01A ->068A	066 A<>B S\$X	39C R= 0	070 NC=C ALL
01C ->0749	130 LDI S\$X	2B3 JNC \$-2A	050 ->14C9	086 B=A S\$X	130 LDI S\$X	058 G=C ER,+	248 SETF 9
1B6 A=-1 XS	02C 44 ,	000 NOP	268 WRIT 9(0)	3D9 ?NC XQ	01E 30 ^	00C ?FSET 3	084 CLR F5
3BB JNC \$-09	36A ?A\$C R-<	000 NOP	3B8 READ 14(d)	01C ->07F6	31C R= 1	15F JC \$+2B	20C ?FSET 2

OF BLOCK

B	C	D	E	F
9	A	B	C	
02B JNC \$+05 24C ?FSET 9	053 JNC \$+0A 31C R= 1	090 LDR- 2	013 JNC \$+02 23A C=C+1 M	2ED ?NC XQ
088 SETF 5 04B JNC \$+09	07C RCR 4 198 C=M ALL	010 LDR- 0	006 A=0 S\$X 170 PUSH ADR	0A4 ->29BB
0B0 C=N ALL 31D ?NC XQ	056 C=0 XS 1BC RCR 11	358 ST=C X	01E A=0 MS 1EE C=C+C ALL	3D8 C>ST X
3A1 ?NC XQ 03C ->0FC7	10E A=C ALL 158 M=C ALL	39C R= 0	341 ?NC XQ 1EE C-C+C ALL	3E0 RTN
01C ->07E8 149 ?NC XQ	3B8 READ 14(d) 00C ?FSET 3	058 G=C R,+,t	014 ->05EB 3DA RSHFC M	35C R= 12
044 CLRF 4 024 ->0952	358 ST=C X 05B JNC \$+0B	335 ?NC GO	130 LDI S\$X 3DA RSHFC M	0F8 READ 3(X)
3B8 READ 14(d) 198 C=M ALL	04E A>C ALL 330 FETCH S\$X	032 ->0CCD	020 32 3DA RSHFC M	04A C=0 R,-
3B8 C>ST X 10E A=C ALL	244 CLRF 9 266 ?C\$0 SIX	3F8 READ 15(e)	1EE C=C+C ALL 10E A=C ALL	1B8 A-E ALL
00C ?FSET 3 31D ?NC XQ	24D ?NC GO 01B JNC \$+03	3E8 WRIT 15(e)	1EE C=C+C ALL 1B8 A=A-1 MS	1B8 A=A-1 MS
023 JNC \$+04 0BC ->2FC7	032 ->0C93 0D0 LDR- 3	0E6 C<B S\$X	3E0 RTN 37C RCR 12	017 JC \$+02
358 ST=C X 2B8 READ 10(+) 158 M=C ALL	03B JNC \$+07 0B0 ->2CF0	260 SETHX	1B0 POP ADR 1E0 GOTO ADR	050 LDR- 1
048 SETF 4 10E A=C ALL	07C RCR 4 23A C=C+1 M	04C ?FSET 4	330 FETCH S\$X 141 ?NC XQ	331 ?NC GO
398 C=ST X 086 B=A S\$X	3A1 ?NC XQ 330 FETCH S\$X	3A0 ?NC RTN	033 JNC \$+06 0A4 ->2950	0A4 ->00CC
358 ST=C X 2B1 ?NC GO	01C ->07E8 2E6 ?C\$0 SIX	066 A>B S\$X	260 SETHX 158 M=C ALL	002 ->00CC
39C R= 0 03A ->0EA0	3B8 READ 14(d) 017 JC \$+02	166 A=A+1 SIX	1B0 POP ADR 34D ?NC XQ	007 7 G
2E8 G-C R,+,t 0BC ?FSET 5	358 ST=C X 1E0 GOTO ADR	34C ?FSET 12	330 FETCH SIX 0A4 ->29D3	126 294 8

10 BLOCK			HP41CV SYSTEM ROMS			1:F			DIS-ASSEMBLER LISTINGS 5-AUG-81											
0	1	2	3	4	5	6	7													
041 65 A 043 67 C 043 69 E 00D 13 H 0CB JNC \$+19 171 ?NC XQ 045 165 Z 261 ?NC XQ	046 70 F 048 72 H 040 64 E 00B 8 H 0AD 173 - 064 ->195C 1A6 A>A-1 S&X 060 ->1898	000 256 000 0 000 15 0 000 C=N ALL 013 19 S 03B JNC \$+07 1A6 A>A-1 S&X 33B JNC \$-19	002 2 028 40 ( 080 128 0 064 ->19B2 008 8 H 0AD 173 - 060 ->184D 002 2 B	001 1 025 37 Z 000 0 000 0 0 0F0 C>N ALL 080 C=N ALL 2BE C=-C-1 MS 060 ->184D 001 1 A	003 3 022 34 - 000 0 0 088 READ 2(Y) 2BE C=-C-1 MS 000 NOP 331 ?NC GO 080 C=N ALL 002 ->00CC 005E C=0 MS	004 4 200 512 D 098 152 X 2C9 ?NC XQ 0F0 C>N ALL 01D ?NC XQ 002 ->00DA 01E 30 2 350 RTN	042 66 044 68 D 01E 30 0 064 ->19B2 353 JNC \$-16 060 ->1807 0B2 178 2 093 147 S	047 71 049 73 I 019 25 Y 10E A=C ALL 0AB 171 + 369 ?NC GO 01E 30 2 018 24 X 00F 15 0	000 0 000 0 0 080 C=N ALL 080 C=N ALL 002 ->00DA 018 24 X 00F 15 SO CA	000 0 000 0 0 045 ?NC XQ 01D ?NC XQ 063 JNC \$+0C 0AA 170 \$ 080 C=N ALL 10E A=C ALL 001 1	027 39 029 41 ) 06C ->1B11 060 ->1807 084 132 D 0B0 C=N ALL 002 ->00DA 0AF 175 / 094 ->21D4	024 36 \$ 026 38 I 163 JNC \$+2C 088 SETF 5 00F 15 0 135 ?NC XQ 00D 13 H 060 ->184D 0B0 C=N ALL 388 SETF 0	021 33 ! 023 35 \$ 04B 171 + 2C9 ?NC XQ 00D 13 H 060 ->184D 0AF 175 / 094 ->21D4	029 32 000 0 0 013 19 S 064 ->19B2 0B0 C=N ALL 3D3 JNC \$-06 0B0 C=N ALL 388 SETF 0						
10 BLOCK																				
8	9	A	B	C	D	E	F													
308 SETF 1 013 19 S 08F 143 0 016 22 V 013 19 S 003 3 C 241 ?NC XQ 0CE 206 "	208 SETF 2 001 1 A 014 20 T 001 1 A 002 2 B 04E C=0 ALL 00C ->0390 00C 12 L	201 ?NC GO 121 ?NC GO 113 275 S 191 ?NC GO 000 NOP 168 WRIT 5(M) 351 ?NC GO 003 3 C	076 ->1D80 05E ->1748 201 513 A 00E ->0364 000 NOP 1A8 WRIT 6(N) 01E ->07D4 2C1 ?NC GO	000 NOP 08E 142 N 171 ?NC GO 000 NOP 08A ->2250 1E8 WRIT 7(P) 090 144 P 052 ->14B0	284 CLRF 7 009 9 I 05E ->175C 288 SETF 7 094 148 T 228 WRIT 8(P) 00C 12 L 094 148 T	235 ?NC GO 013 19 S 08E 142 N 283 JNC \$-30 301 769 A 3E0 RTN 103 259 C 00C 12 L	092 ->248D 001 1 A 001 1 A 090 144 P 103 259 C 08F 143 0 231 ?NC GO 00C 12 L	08C 140 L 351 ?NC XQ 014 20 T 005 5 E 201 ?NC GO 014 20 T 08A ->228C 003 3 C	003 3 C 084 ->21D4 001 1 A 005 5 E 02E ->0B80 213 531 S 087 135 G 04E C=0 ALL	112 274 R 333 JNC \$-1A 351 ?NC XQ 002 2 B 286 646 F 198 C=M ALL 012 18 R 028 WRIT 0(T)	201 513 A 08E 142 N 084 ->21D4 130 LDI S1X 203 S15 C 2F0 WRITE DATA 00C 12 L 068 WRIT 1(Z)	259 ?NC GO 013 19 S 2AB JNC \$-2B 007 7 G 135 ?NC GO 3E0 RTN 003 3 C 048 WRIT 2(Y)	05A ->1696 101 257 A 097 151 W 345 ?NC GO 05A ->164D 084 132 D 108 SETF 8 028 JRC \$+05	086 134 F 1A9 ?NC GO 005 5 E 05A ->1601 081 129 A 00C 12 L 0CD ?NC GO 098 152 X 028 JRC \$+05	008 8 H 09E ->276A 009 9 I 094 148 T 00C 12 L 05E ->1733 00C 12 L					
11 BLOCK																				
0	1	2	3	4	5	6	7													
003 3 C 066 ->1981 05E ->1722 00E 14 N 0B8 READ 2(Y) 094 148 T 018 24 X 106 262 F	04E C=0 ALL 087 135 6 08C 140 L 005 5 E 0E8 WRIT 3(X) 003 3 C 01E 30 288 SETF 7	008 WRIT 3(X) 005 5 E 105 261 D 087 135 N 311 ?NC GO 001 1 A 005 5 E 301 ?NC GO	309 ?NC GO 004 4 D 104 260 D 30E 782 N 002 ->00C4 006 6 F 048 SETF 4 05A ->16C0	002 ->00C2 071 ?NC GO 2A1 ?NC GO 105 261 E 098 152 X 0B0 C=N ALL 0B0 C=N ALL 094 148 T	099 153 Y 05E ->171C 088 ->22A8 148 SETF 6 01E 30 ^ 3B1 ?NC GO 029 ?NC GO 00E 14 N	010 16 P 084 132 D 000 NOP 301 ?NC GO 005 5 E 062 ->1A0A 06A ->1A0A 009 9 I	00F 15 D 001 1 A 000 NOP 05A ->16C0 0B0 C=N ALL 0BF 191 ? 083 131 C 088 SETF 5	103 259 C 012 18 R 280 ?NC GO 09E 158 ^ 029 ?NC GO 203 S15 C 03F 63 ? 023 JNC \$+04	195 ?NC GO 007 7 G 08A ->22AF 012 18 R 06A ->1A0A 206 518 F 203 515 C 083 131 C	086 ->2165 099 ?NC GO 085 133 E 005 5 E 096 150 V 0AE A>C ALL 206 518 F 012 18 R	092 146 R 05E ->1726 113 275 S 014 20 T 004 4 D 2AE C=-C-1 ALL 135 ?NC XQ 006 6 F	02D 45 - 084 132 D 204 516 D 00E 14 N 0AE A>C ALL 058 ->164D 0B0 C=N ALL 066 ->193B	004 4 D 001 1 A 270 ?NC GO 005 5 E 375 ?NC XQ 12B JNC \$+25 368 JNC \$-13 OED ?NC GO	0B0 C=N ALL 089 ?NC GO 084 132 D 050 ->14ED 3E0 RTN 0B1 177 1 098 152 X 066 ->193B	205 ?NC GO 089 ?NC GO 084 132 D 050 ->14ED 3E0 RTN 02D 45 - 309 777 I 0BF 191 ?					
11 BLOCK																				
8	9	A	B	C	D	E	F													
213 531 S 307 775 G 056 ->15A0 004 4 D 351 ?NC XQ 000 ->0098 1B5 ?NC XQ 01D ?NC XQ	206 518 F 092 146 R 08C 140 L 013 19 S 084 ->21D4 241 ?NC GO 078 ->1E75 060 ->1807	115 ?NC GO 008 8 H 002 2 B 041 ?NC XQ 125 ?NC XQ 006 ->0190 2CB JNC \$-27 166 A>A-1 S&X	05A ->1645 0B0 C=N ALL 30C 780 L 074 ->1D10 074 ->1D49 098 152 X 08B 139 K 166 A>A-1 S&X	083 131 C 2C9 ?NC GO 08E 142 N 03B JNC \$+07 3B8 JNC \$-09 02F 47 / 003 3 C 0B8 READ 2(Y)	03F 63 ? 066 ->1982 000 C=N ALL 08E 142 N 086 134 F 031 49 1 001 1 A 269 ?NC XQ	213 531 S 093 147 S 0B0 C=N ALL 001 1 A 006 6 F 0B0 C=N ALL 010 16 P 060 ->189A	206 518 F 000 13 M 115 ?NC GO 005 5 E 00F 15 0 22D ?NC GO 062 ->1888 082 ->2000 002 ->00CC	135 ?NC XQ 008 8 H 06E ->1B45 008 13 M 2E0 DSPOFF 092 146 R 088 136 H 331 ?NC GO	058 ->164D 088 SETF 5 087 135 6 3F9 ?NC XQ 130 LDI S&X 092 146 R 088 136 H 085 133 E	3C3 JNC \$-08 3CB JNC \$-07 00F 15 0 070 ->1CFE 009 9 I 02D 45 - 003 3 C 010 16 P	000 NOP 087 135 6 00C 12 L 295 ?NC GO 399 ?NC XQ 010 16 P 025 37 Z 010 16 P	165 ?NC GO 113 275 S 088 SETF 5 002 ->00A5 09C ->27E6 351 ?NC XQ 0B8 A>C MS 2CC ?FSET 13	046 ->2959 209 521 I 3CB JNC \$-07 090 144 P 015 ?NC XQ 084 ->21D4 2B8 C=-C-1 MS 023 JNC \$+04	08F 143 0 384 CLRF 0 096 150 V 02D 45 - 008 ->2025 308 SETF 1 0B8 A>C MS 308 SETF 1	314 788 T 281 ?NC GO 005 5 E 012 18 R 261 ?NC XQ 208 SETF 2 0B0 C=N ALL 0ED ?NC XQ					

## 12 BLOCK

0	1	2	3	4	5	6	7
004 ->013B	066 ->198C	080 C=N ALL	051 ->14ED	089 137 I	004 4 D	395 ?NC GO	04E 78 "
2B1 ?NC GO	090 144 P	1CD ?NC GO	04E C=0 ALL	010 16 P	012 18 R	052 ->14E5	068 SETF 5
00E ->03AC	00F 15 O	06E ->1B73	270 RAM SLCT	240 SETDEC	2F5 ?NC GO	089 137 I	3DB JNC 2-05
094 148 T	014 20 T	098 152 X	0EE C>B ALL	269 ?NC XD	052 ->14BD	303 771 C	087 135 G
010 16 P	013 19 S	014 20 T	0E8 WRIT 3(X)	064 ->199A	084 132 D	113 275 S	005 5 E
COD 13 M	2A5 ?NC GO	013 19 S	3B9 ?NC GO	1EE C=C+I ALL	00E 14 D	301 ?NC GO	212 530 R
00F 15 D	00E ->03A9	001 1 A	002 ->00EE	23A C=C+I M	012 18 R	054 ->16C0	24E 590 "
012 18 R	000 NOP	00C 12 L	093 147 S	046 C=0 S8X	08D ?NC GO	286 646 F	165 ?NC GO
010 16 P	000 NOP	138 READ 4(L)	008 8 H	30B JNC *-1F	02A ->0A2F	213 531 S	05A ->1659
281 ?NC GO	275 ?NC GO	0EE C>B ALL	003 3 C	0BE 190 >	08E 142 M	129 ?NC GO	093 147 S
00E ->03AO	01E ->079D	023 JNC *+04	080 C=N ALL	13C 316 <	014 20 T	05A ->164A	00F 15 O
084 132 B	098 152 X	08C 140 L	2FA ?C#0 M	218 536 X	012 18 R	04B 171 *	003 3 C
02D 45 -	02B 43 *	103 259 C	01B JNC *+03	198 C=M ALL	000 ?NC GO	04E 78 *	351 ?NC XD
012 18 R	031 49 1	212 530 R	2BE C=-C-1 MS	2F0 WRITE DATA	09E ->2703	221 ?NC GO	084 ->21D4
080 C=N ALL	00E 14 N	18C ?FSET 11	0E8 WRIT 3(X)	31B JNC *-1D	09E 158 ^	072 ->1C88	06B JNC 2+0D
231 ?NC GO	00C 12 L	3B5 ?C XO	3B3 JNC *-0A	0BE 142 N	012 18 R	0AD 173 -	08E 142 N

## 12 BLOCK

8	9	A	B	C	D	E	F
001 1 A	109 265 I	08A ->2260	349 ?NC XD	213 531 S	379 ?NC GO	04D 77 *	05A ->1609
014 20 T	113 275 S	08E 142 N	050 ->14D2	349 ?NC XO	05A ->16DE	018 24 X	0BF 191 ?
351 ?NC XO	255 ?NC GO	00F 15 O	01D ?NC XO	050 ->14D2	097 151 W	019 25 Y	= Y
084 ->21D4	05E ->1795	045 ?NC GO	060 ->1807	261 ?NC XD	005 5 E	05A ->1629	03D 61 <
043 JNC *+08	094 148 T	052 ->1411	3B9 ?NC GO	060 ->1898	109 265 I	0BF 191 ?	03C 60 <
08E 142 N	012 18 R	0AA 170 *	02E ->0BEE	37B JNC *-11	216 534 V	030 48 0	018 24 X
009 9 I	011 17 Q	114 276 T	0AD 173 -	098 152 X	1BD ?NC GO	03C 60 <	005 ?NC GO
013 19 S	013 19 S	213 531 S	114 276 T	01E 30 ^	00E ->036F	018 24 X	05A ->1601
351 ?NC XO	080 C=N ALL	349 ?NC XO	213 531 S	030 48 0	0BF 191 ?	3E9 ?NC GO	099 153 Y
084 ->21D4	2F9 ?NC GO	050 ->14D2	198 C=M ALL	031 49 1	030 48 0	056 ->15FA	03E 62 >
388 SETF 0	062 ->18BE	135 ?NC XO	2A0 SETDEC	3E1 ?NC GO	04D 77 *	0BF 191 ?	03C 60 <
308 SETF 1	094 148 T	060 ->184D	2B8 C=-C-1 MS	06E ->1BF8	018 24 X	030 48 0	018 24 X
1E1 ?NC GO	013 19 S	043 JNC *+08	158 M=C ALL	085 133 E	045 ?NC GO	030 61 =	0FB READ 3(X)
07A ->1E78	013 19 S	0AB 171 *	39B JNC *-0D	00E 14 N	05A ->1611	03C 60 <	OAE A>C ALL
085 133 E	000 NOP	114 276 T	0AF 175 /	30F 783 O	0BF 191 ?	018 24 X	0BB READ 2(Y)
01A 26 Z	181 ?NC GO	213 531 S	114 276 T	019 25 Y	025 ?NC GO	025 ?NC GO	0EB WRIT 3(X)

## 13 BLOCK

0	1	2	3	4	5	6	7
OAE A>C ALL	0BF 191 ?	3E1 ?NC GO	080 C=N ALL	01E ->075C	1E2 C=C+C PR	244 CLRF 9	006 ->0161
OAB WRIT 2(Y)	019 25 Y	056 ->15F8	1E5 ?NC GO	086 134 F	1E2 C=C+C PR	251 ?NC GO	288 SETF 7
3B9 ?NC GO	03D 61 =	000 NOP	07E ->1F79	006 6 F	1E2 C=C+C PR	006 ->0194	00C ?FSET 3
002 ->00EE	018 24 X	31D ?NC GO	08E 142 N	00F 15 0	083 JNC *+10	34D ?NC XD	3CB JNC 2-07
0BF 191 ?	051 ?NC GO	092 ->24C7	007 7 G	001 1 A	388 READ 14(d)	1BC ->6FD3	353 JNC 2-16
019 25 Y	05A ->1614	091 145 Q	009 9 I	284 CLRF 7	17C RCR 6	2E2 ?C80 PR	241 ?NC XO
03C 60 <	0BF 191 ?	105 261 E	013 19 S	38B JNC *-09	3D8 C>ST X	07F JC *+0F	00C ->0390
018 24 X	030 48 0	318 792 X	3D1 ?NC GO	000 NOP	04C ?FSET 4	241 ?NC XD	304 CLRF 1
3BD ?NC GO	03E 62 >	083 131 C	03E ->0FF4	000 NOP	01F JC *+03	00C ->0390	284 CLRF 7
056 ->15EF	018 24 X	005 5 E	08E 142 N	39D ?NC XD	048 SETF 4	28C ?FSET 7	00C ?FSET 3
0BF 191 ?	3C5 ?NC GO	004 4 D	00F 15 0	07C ->1FE7	013 JNC *+02	03B JNC *+07	01F JC *+03
030 48 0	056 ->15F1	048 SETF 4	001 1 A	0AB JNC *+15	044 CLRF 4	284 CLRF 7	008 SETF 3
03D 61 =	0BF 191 ?	023 JNC *+04	288 SETF 7	000 NOP	3D8 C>ST X	398 C=ST X	383 JNC 2-10
018 24 X	019 25 Y	094 148 T	0ED ?NC XD	000 NOP	13C RCR 8	3A8 WRIT 14(d)	004 CLRF 3
019 ?NC GO	03E 62 >	003 3 C	004 ->013B	220 C=KEY KY	398 C=ST X	244 CLRF 9	398 C=ST X
05A ->1606	018 24 X	00F 15 0	171 ?NC GO	01C R= 3	3A8 WRIT 14(d)	185 ?NC GO	3A8 WRIT 14(d)

## 13 BLOCK

8	9	A	B	C	D	E	F
309 ?NC XO	076 118 v	23A 570 :	135 309 5	193 403 S	1EC 492 1	271 625 a	30E 782 N
0B8 ->2EC2	07D 125 :	0D1 209 Q	13E 318 >	177 375 u	242 578 B	277 631 w	2DC 732 h
363 JNC 2-14	14D 333 :	0E0 224 :	147 327 G	19E 414 :	209 521 I	288 648 H	2E8 744 o
04E C=0 ALL	345 837 E	0E7 231 S	163 355 c	228 552 :	1FC 508 I	337 823 7	2EF 751 z
0E6 C>B S&X	33C 828 <	0ED 237 B	154 340 T	1A4 420 \$	260 608 N	292 658 R	31A 794 T
18C RCR 11	08C 140 L	0F3 243 S	154 346 Z	1A6 422 \$	20E 526 N	298 664 X	314 788 b
OAE A>C ALL	092 146 R	0F9 249 v	168 363 k	220 544 :	1C0 448 e	29E 670 :	2E2 738 H
2B9 ?NC XD	098 152 X	101 257 A	171 369 o	1AC 428 :	11F 287 -	2B0 688 0	308 776 v
00C ->03AE	09E 158 ^	109 265 I	17C 380 I	189 441 9	22E 558 :	2B9 697 9	2F6 758 v
000 0 P	0A4 164 \$	27C 636 I	182 386 B	04F 79 0	252 594 R	2A8 680 C	320 800 l
04A 74 J	0AA 170 :	10E 270 N	188 392 H	330 816 0	257 599 W	2C1 705 A	24C 588 k
054 84 T	0B2 178 2	32B 811 +	11A 282 Z	1C8 456 H	25C 604 \	004 218 Z	2FC 764 l
05C 92 \	0BB 187 ;	114 276 T	191 401 Q	2A3 675 :	182 434 2	215 533 B	328 808 p
06F 111 o	0C2 194 B	124 292 \$	199 409 Y	1DC 476 :	265 613 e	282 642 P	06B 107 k
1D6 470 V	0C8 200 H	12D 301 -	032 50 2	1E7 487 S	269 617 i	2D0 720 V	02A 42 P
2CA 714 J	0CC 204 L	132 306 2	045 69 E	061 97 :	26D 621 n	2D6 726 V	000 0 P

## 14 BLOCK

	0	1	2	3	4	5	6	7									
OC8	200	H	3EC 1004	1	3FF 1023	i	266 C=C-1	S&X	04A	74	J	1A6 422	8	1D6 470	U	0F3 243	s
18C	396	L	388 READ	14(d)	2A0 SETDEC		236 C=C+1	XS	054	84	T	06B 107	k	076 118	2FC 764	2FC	1
124	292		23C RCR	2	080 C=N ALL		276 C=C-1	XS	05C	92	\	298 664	X	154 340	242 578	242	B
109	265	I	358 ST=C	X	2B6 C=-C-1 MS		01B JNC	\$+03	06F	111	O	02A 42	*	2DC 732	0F9 249	0F9	y
0E7	231		008 SETF	3	000 NOP		226 C=C+1	S&X	308	776	H	23A 570	:	31A 794	260 608	260	608
218	536	X	398 C=ST	X	010 ?NC XQ		3E0 RTN		320	800		147 327	G	220 544	252 594	252	R
292	658	R	37C RCR	12	060 ->1807		1F6 C=C+C	XS	2F6	758	V	1AC 428	,	2E8 744	228 552	228	(
0C2	194	B	3A8 WRIT	14(d)	070 N=C ALL		01B JNC	\$+03	26D	621	B	2CA 714	J	30E 782	101 257	101	A
29E	670		3E0 RTN		3E0 RTN		04E C=0	ALL	271	625	G	163 355	C	177 375	314 788	314	T
2A3	675	#	04E C=0	ALL	2FA ?C\$0 M		02B JNC	\$+05	032	50	2	288 648	H	17C 380	2E2 738	2E2	b
1E7	487		270 RAM	SLCT	017 JC \$+02		04A C=0	R<-	045	69	E	27C 636	I	10E 270	337 823	337	7
127	295		3F8 READ	15(e)	04E C=0 ALL		26A C=C-1	R<-	04F	79	O	282 642	B	20E 526	2EF 751	2EF	0
34D	845		3E0 RTN		2A0 SETDEC		056 C=0	XS	061	97	a	098 152	X	199 409	189 441	189	9
3E0	992		085 133	E	35C R= 12		3D4 R=R-1		1EC 492	1	D	07D 125	Y	193 403	1B2 434	1B2	2
348	840	H	085 181	5	2F6 ?C\$0 XS		3D4 R=R-1		1DC 476	1	\	0AA 170	*	257 599	OB2 178	OB2	2
09E	158		3E0 992	'	3A0 ?NC RTN		3E0 RTN		1C0 448	e		32B 811	+	330 816	0	0	224

## 14 BLOCK

	8	9	A	B	C	D	E	F										
114	276	T	22E 558	.	3E7 999 s	19D ?NC XQ	132 306	2	191 401	0	328 808	(	0AE A>C	ALL	0AE A>C	ALL		
11F	287	-	0DA 218	Z	1FD ?NC XQ	058 ->1667	3E0 1004	1	3EE 1006	n	000 0	*	078 READ	1(Z)	028 WRIT	0(T)		
11A	282	Z	280 688	0	0BC ->2F7F	15C R= 6	04E C=0	ALL	06E A>B	ALL	3D5 ?NC XQ		0B8 READ	2(Y)	0B8 READ	2(Y)		
13E	318	>	289 697	9	2EE ?C\$0 ALL	00E A=0	270 RAM	SLCT	198 C=M	ALL	088 ->22F5	X	068 WRIT	1(Z)	0F8 READ	3(X)		
215	533	U	2A8 680	(	3C1 ?NC 60	0AE A>C	ALL	378 READ	13(C)	0AE A>C	ALL	018 24		0A8 WRIT	2(Y)	0A8 WRIT	2(Y)	
25C	604	\	2C1 705	A	002 ->0FO	2F0 WRITE	DATA	03C RCR	3	361 ?NC XQ		3B5 ?NC XQ		020 SETDEC	3(X)	050 ->14ED	2(Y)	
0BB	187	;	19E 414		293 ?NC GO	0AE A>C	ALL	106 A=C	S&X	050 ->14D8		3B9 ?NC 60		0AE A>C	ALL	0AE A>C	ALL	
0D1	209	Q	12D 301	-	0BE ->2FA5	26E C=C-1	ALL	002 A=0	ER	0AE A>C	ALL	002 ->0EE		0E8 WRIT	3(X)	0E8 WRIT	3(X)	
092	146	R	2D6 726	v	269 617 i	270 RAM	SLCT	3E0 RTN		240 SETDEC		3B5 ?NC XQ		3E0 RTN		3E0 RTN		
1FC	508	I	277 631	w	0CC 204 L	3D4 R=R-1	31C R= 1	2FE ?C\$0	MS	385 ?NC XQ		3B5 ?NC XQ		240 SETDEC		240 SETDEC		
0ED	237	B	0A4 164	s	188 392 H	394 ?R= 0	2EA ?C\$0	R<-	340 ?NC RTN		050 ->14ED		050 ->14ED		04E C=0	ALL	04E C=0	ALL
345	837	E	08C 140	L	168 363 k	3CB JNC \$-07	360 ?NC RTN	23E C=C+1	MS	3B5 ?NC XQ		050 ->14ED		26E C=C-1	ALL	26E C=C-1	ALL	
33C	828	<	171 369	a	182 386 B	3E0 RTN		23C RCR	2	033 JNC \$-06		050 ->14ED		260 SETHX		260 SETHX		
1C8	456	H	265 613	e	15A 346 Z	345 ?NC XQ	3EB JNC \$-03	27E C=C-1	MS	04E C=0	ALL	270 RAM	SLCT	1EE C=C+C	ALL	1EE C=C+C	ALL	
209	521	I	135 309	S	323 803 t	050 ->14E9	24C 588 L	3E0 RTN		000 NOP		038 READ	0(T)	3E0 RTN		3E0 RTN		
14D	333	#	2D0 720	P	3F0 1008 P	143 JNC \$+28	1A4 420 \$	000										

## 15 BLOCK

	0	1	2	3	4	5	6	7									
147	327	G	160 352	'	152 338 R	156 342 V	150 336 P	041 65	A	042 66	B	043 67	C	043 67	C	043 67	C
171	369	a	175 373	u	159 345 Y	15A 346 Z	15B 347 P	046 70	F	047 71	G	048 72	H	048 72	H	048 72	H
10E	270	N	1E0 480	g	191 401 Q	190 400 P	108 264 H	10E 270	N	048 75	K	049 76	L	049 76	L	049 76	L
183	387	C	000 0	p	01C 28	\	000 0	04E	0	000 0	R	000 0	S	04F 79	S	04F 79	S
141	321	A	017 23		018 24 X	019 25 Y	10C 268 L	051 81	Q	052 82	R	053 83	S	053 83	S	053 83	S
140	320	e	014 20	T	015 21 U	016 22 V	10C 268 L	055 85	U	056 86	V	057 87	W	057 87	W	057 87	W
142	322	B	011 17	O	012 18 R	013 19 S	10C 268 L	059 89	Y	05A 90	Z	03D 61	=	02C 44	=	02C 44	=
143	323	C	010 16	P	014 26 Z	105 261 E	000 0	03A 58	:	020 32	:	063 99	:	01D 29	:	01D 29	:
148	328	H	153 339	S	151 337 Q	157 343 W	155 341 U	061 97	:	062 98	:	063 99	:	01A 410	:	01A 410	:
170	368	P	14C 332	L	15C 348 \	15D 349 J	15E 350 G	07E 126	:	025 37	:	07F 127	:	19A 410	:	19A 410	:
10E	270	o	10F 271	O	1CF 463 O	1D0 464 V	107 263 G	10E 270	H	07F 127	:	000 0	O	00D 13	M	00D 13	M
100	256	e	000 0	e	196 406 V	185 389 E	177 375 W	05E 94	~	000 0	e	000 0	e	00D 13	M	00D 13	M
178	376	X	1A8 424	(	1A9 423 )	1AC 428 ,	10C 268 L	02D 45	-	037 55	7	038 56	8	038 56	8	038 56	8
146	326	F	186 390	F	14E 334 "	14F 335 O	10C 268 L	02B 43	+	034 52	4	035 53	5	035 53	5	035 53	5
145	325	E	19C 412	\	19D 413 J	19E 414 X	10C 268 L	02A 42	*	031 49	1	032 50	2	032 50	2	032 50	2
167	359	s	172 370	r	176 374 v	198 408 X	000 0	02F 47	/	030 48	0	02E 46	,				

## 15 BLOCK

	8	9	A	B	C	D	E	F									
044	68	D	045 69	E	0EE C>B ALL	0EE C>B ALL	3EE LSHFA ALL	2E2 ?C\$0 ER	3DA RSHFC N	050 ->1421							
049	73	I	04A 74	J	361 ?NC XQ	158 H=C	3EE LSHFA ALL	01F JC \$+03	266 C-C-1 S&X	240 SETDEC							
04D	77	#	108 264	H	050 ->14DB	0AE A>C	3EE LSHFA ALL	2FC RCR 13	01F JC \$+03	080 C=N ALL							
050	80	P	000 0	@	01B JNC \$+03	10E A=C	35C R= 12	046 C=0 S&X	2FA ?C\$0 M	2EE ?C\$0 ALL							
054	84	T	10C 268	L	3DA RSHFC M	2F0 WRITE	DATA	226 C=C+1 S&X	38C ?FSET 0	3E7 JC \$-04	10J JNC \$+3A						
058	88	X	10C 268	L	226 C=C+1 S&X	29C R= 7	226 C=C+1 S&X	013 JNC \$+02	046 C=0 S&X	23E C=C+1 MS							
03F	63	?	10C 268	L	2F6 ?C\$0 XS	04A C=0	166 A=A+1 S&X	1B6 A=A-1 MS	046 C=0 S&X	11B JNC \$+23							
105	261	E	000 0	@	3EF JC \$-03	25C R= 9	342 ?A\$0 ER	070 N=C ALL	1B1 ?NC XQ	1BB JNC \$+37							
064	100	d	065 101	e	11D ?NC XQ	2EA ?C\$0	R<-	01F JC \$+03	198 C=M ALL	060 ->186C	085 ?NC XQ						
03C	60	<	03E 62	>	064 ->1947	027 JC \$+04	3FA LSHFA M	01D ?NC XQ	060 ->1807	288 ?FSET 7	050 ->1421						
198	411	L	207 519	G	198 C=M ALL	11C R= 8	006 A=0 S&X	158 M=C ALL	198 C=M ALL	097 JC \$+12							
024	36	g	187 391	G	394 R= 0	050 LDR-	1	2E2 ?C\$0 ER	158 M=C ALL	097 JC \$+12							
039	57	9	10C 268	L	017 JC \$+02	25C R= 9	047 JC \$+08	10E A=C ALL	0AE A>C ALL	2A0 SETDEC							
036	54	6	10C 268	L	3D4 R=R-1	00E A=0	ALL	2FC RCR 13	038 READ 0(T)	38C ?FSET 0	0B0 C=N ALL						
033	51	3	10C 268	L	04A C=0 R=	10A A=C	R<-	046 C=0 S&X	046 A>C S&X	053 JNC \$+0A	23E C=C+1 MS						
17E	382	"	388 SETF 0	O	0FA C>B M	04A C=0	R<-	226 C=C+1 S&X	106 A=C S&X	085 ?NC XQ	17B JNC \$+2F						

## 16 BLOCK

0	1	2	3	4	5	6	7										
0CB JNC \$+19 363 JNC \$-14 03F JC \$+07 043 JNC \$+08 33F JC \$-19 3B0 C=C AND A 378 READ 13(c) 0EE C>B ALL	00E A=0 ALL 3D8 C>ST X 141 ?NC XQ 1AB ?NC XQ 3A8 WRIT 14(d) 1BC RCR 11 038 READ 0(T)	085 ?NC XQ 080 C=N ALL 28C ?FSET 7 044 ->2950 070 ->1C6B 0AE A>C ALL 046 C=0 SIX 240 SETDEC	050 ->1421 080 C=N ALL 28C ?FSET 7 027 JC \$+04 3E5 ?NC XQ 064 100 d 158 M=C ALL 206 C>TA SIX 22E C=C+1 ALL	2EE ?C\$0 ALL 088 READ 2(Y) 1AB ?NC XQ 048 ->2AF9 31B JNC \$-1D 171 ?NC XQ 03C RCR 3 22E C=C-1 ALL	04B JNC \$+15 088 READ 2(Y) 1AB ?NC XQ 070 ->1C6B 0BB ?NC XQ 0CE C=B ALL 01C ->075C 368 WRIT 13(c) 26E ?C\$0 MS	363 JNC \$-14 0AE A>C ALL 070 ->1C6B 0BB ?NC XQ 0CE C=B ALL 198 C=M ALL 3E0 RTN 043 JNC \$+08 26E ?C\$0 MS	00E A=0 ALL 0F8 READ 3(X) 062 98 b 08C ->232F 3B0 C=C AND A 198 C=M ALL 3E0 RTN 043 JNC \$+08	080 C=N ALL 36E ?AOC ALL 3C1 ?NC GO 3B3 JNC \$-10 2EE ?C\$0 ALL 0AE A>C ALL 378 READ 13(c) 23E C=C+1 MS	078 JNC \$+0F 087 JC \$+16 002 ->0FO 04E C=0 ALL 28F JC \$-2F 3E0 RTN 02F JC \$+16 0AE A>C ALL 1BC RCR 11 02F JC \$+05	0F8 READ 3(X) 2CC ?FSET 13 088 READ 2(Y) 270 RAM SLCT 32B JNC \$-1B 0AE C=N ALL 130 LDI SIX 038 READ 0(T)	361 ?NC XQ 06F JC \$+0D 0AE A>C ALL 3B8 READ 14(d) 0EE C>B ALL 1A5 ?NC XQ 130 LDI SIX 05E C=0 MS	050 ->14D8 04E C=0 ALL 0FB READ 3(X) 3D8 C>ST X 370 C=C OR A 058 ->1669 005 5 E 23E C=C+1 MS	070 N=C ALL 270 RAM SLCT 36E ?AOC ALL 04C ?FSET 4 02B JNC \$+05 080 C=N ALL 260 SETHX 053 JNC \$+0A 23E C=C+1 MS	080 C=N ALL 3B8 READ 14(d) 367 JC \$-14 3A7 JC \$-0C 0CE C=B ALL 0AE A>C ALL 206 C>TA SIX 27E C=C-1 MS	2EE ?C\$0 ALL 3D8 C>ST X 260 SETHX 3D8 C>ST X 2AE C=-C-1 ALL 0AE C=0 ALL 019 ?NC GO 2F6 ?C\$0 XS	053 JNC \$+0A 04C ?FSET 4 2CC ?FSET 13 28C ?FSET 7 000 NOP 270 RAM SLCT 072 ->1C06 01B JNC \$+03	080 C=N ALL 3E0 RTN 04C ?FSET 4 2CC ?FSET 13 28C ?FSET 7 000 NOP 270 RAM SLCT 072 ->1C06 01B JNC \$+03

## 16 BLOCK

8	9	A	B	C	D	E	F									
056 C=0 XS 0C9 ?NC GO 04C ?FSET 4 046 C=0 SIX 398 C=ST X 2F3 JNC \$-22 3D8 C>ST X 3F1 ?NC XQ	276 C=C-1 XS 00A ->0232 360 ?C RTN 270 RAM SLCT 23C RCR 2 375 ?NC XQ 30C ?FSET 1 058 ->16FC	35C R= 12 0CE C=B ALL 28C ?FSET 7 35C R= 12 398 C=ST X 058 ->16DD 340 ?NC RTN 05B 91	2E2 ?C\$0 ER 2F0 WRITE DATA 3A0 ?NC RTN 040 SLCT P 2FC RCR 13 130 LDI SIX 3C4 ST=0 065 101	017 JC \$+02 0AE A>C ALL 108 SETF 8 3D4 R=R-1 358 ST-C X 005 5 E 2D8 ST>T 073 115	04E C=0 ALL 3E0 RTN 041 ?NC XQ 3D4 R=R-1 3B8 READ 14(d) 375 ?NC XQ 358 ST-C X 087 135	260 SETHX 0CE C=B ALL 080 ->2C10 354 R= 12 03C RCR 3 058 ->16DD 04E C=0 ALL 0A1 161	0EE C>B ALL 27E C=C-1 MS 3B8 READ 14(d) 32F JC \$-1B 3D8 C>ST X 130 LDI SIX 130 LDI SIX 0C9 201	10E A=C ALL 2FE ?C\$0 MS 33C RCR 1 0CE C=B ALL 38C ?FSET 0 008 8 H OFF 255 8 10B 267	2F0 WRITE DATA 0BB JNC \$+17 358 ST-C X 058 G=C ER,+ 013 JNC \$+02 375 ?NC XQ 3D8 C>ST X 13F 319	038 READ 0(T) 0A1 ?NC XQ 308 SETF 1 0E0 SLCT Q 22E C=C+1 ALL 058 ->16DD 1BC RCR 11 18F 399	36E ?AOC ALL 018 ->0628 148 SETF 6 19C R= 11 30C ?FSET 1 130 LDI SIX 10E A=C ALL 215 533	033 JNC \$+06 2CC ?FSET 13 398 C=ST X 2D2 ?P 01B JNC \$+03 007 7 6 07C RCR 4 180 POP ADR	24C ?FSET 9 360 ?C RTN 2FC RCR 13 051 ?C XQ 22E C=C+1 ALL 358 ST-C X 2A0 SETDEC 21A C>TA MS	381 ?C GO 3B8 READ 14(d) 3A8 WRIT 14(d) 0B5 ->2D14 22E C=C+1 ALL 3B8 READ 14(d) 2B8 C=-C-1 MS 330 FETCH SIX	00B ->02E0 358 ST-C X 3E0 RTN 3A3 JNC \$-0C 1BC RCR 11 2BC RCR 7 260 SETHX 0A6 A>C SIX	00B ->02E0 358 ST-C X 3E0 RTN 3A3 JNC \$-0C 1BC RCR 11 2BC RCR 7 260 SETHX 0A6 A>C SIX

## 17 BLOCK

0	1	2	3	4	5	6	7									
27E C=C-1 MS 3E0 RTN 16D ?NC GO 104 CLRF 8 0EE C>B ALL 04E C=0 ALL 23C RCR 2 3DC R=R+1	067 JC \$+0C 2D8 ST>T 01E ->075B 04E C=0 ALL 10C ?FSET 8 2FO WRITE DATA 2DC R= 13 37C RCR 12	27E C=C-1 MS 000 NOP 0A9 ?NC XQ 270 RAM SLCT 013 JNC \$+02 0D4 R= 10 050 LDR- 1 194 R= 11	077 JC \$+0E 1A6 A=A-1 SIX 05C ->172A 378 READ 13(c) 04E C=0 ALL 360 ?C RTN 010 LDR- 0 3E3 JNC \$-04	27E C=C-1 MS 3E0 JNC \$-03 388 SETF 0 03C RCR 3 2FO WRITE DATA 0AE A>C ALL 0F0 C>N ALL 36B JNC \$-13	08F JC \$+11 3E0 RTN 3CB JNC \$-07 05A C=0 M 16E A=A1 ALL 270 RAM SLCT 270 RAM SLCT 130 LDI SIX	11E A=C MS 2D8 ST>T 0A9 ?NC XQ 270 RAM SLCT 0AE A>C ALL 37B JNC \$-11 3DC R=R+1 33B JNC \$-19 270 RAM SLCT	2D8 ST>T 000 NOP 05C ->172A 0AE A>C ALL 37B JNC \$-11 3DC R=R+1 33B JNC \$-19 270 RAM SLCT	1BE A=A-1 MS 000 NOP 308 SETF 1 038 READ 0(T) 1D5 ?NC XQ 3DC R=R+1 0B4 R= 10 0AE A>C ALL	3FB JNC \$-01 1A6 A=A-1 SIX 1A6 JNC \$-0B 0EE C>B ALL 05C ->1775 3DC R=R+1 3C7 JC \$-08 0E0 SLCT Q	1A6 A=A-1 SIX 3E3 JNC \$-04 3B8 READ 14(d) 0AE A>C ALL 354 R= 12 3DC R=R+1 0AE A>C ALL 2DC R= 13	3D8 JNC \$-05 3E0 RTN 03C RCR 3 10E A=C ALL 02B JNC \$+05 393 JNC \$-0E 270 RAM SLCT 0AO SLCT P	3E0 RTN 0A9 ?NC XQ 358 ST-C X 2F0 WRITE DATA 21C R= 2 1D5 ?NC XQ 038 READ 0(T) 15C R= 6	2D8 ST>T 05C ->172A 384 CLRF 0 038 READ 0(T) 052 C=0 P-Q 05C ->1775 3DC R=R+1 038 READ 0(T) 038 READ 0(T)	1A6 A=A-1 SIX 398 C=ST X 304 CLRF 1 36E ?AOC ALL 2FO WRITE DATA 354 R= 12 0AA A>C R<- 052 C=0 P-Q 01C R= 3	3F3 JNC \$-02 1BC RCR 11 3E0 RTN 360 ?C RTN 3E0 RTN 04B JNC \$+09 3DC R=R+1 04B JNC \$+09 3DC R=R+1 01C R= 3	3F3 JNC \$-02 1BC RCR 11 3E0 RTN 360 ?C RTN 3E0 RTN 04B JNC \$+09 3DC R=R+1 04B JNC \$+09 3DC R=R+1 01C R= 3

## 17 BLOCK

8	9	A	B	C	D	E	F										
1AE A=A-1 ALL 3D4 R=R-1 378 READ 13(c) 05A C=0 M 05A C=0 M 033 JNC \$+06 270 RAM SLCT 206 C>TA SIX	2EE ?C\$0 ALL 3D4 R=R-1 03C RCR 3 27A C=C-1 M 23A C=C+1 M 04E A>C ALL 366 ?AOC SIX 13C RCR 8	2EE ?C\$0 ALL 03C RCR 3 27A C=C-1 M 23A C=C+1 M 04E A>C ALL 02E B=0 ALL 32F JC \$-1B 206 C>TA SIX	06F JC \$+0D 2F2 ?C\$0 P-Q 1C6 A=A-C SIX 0AE A>C ALL 0AE A>C ALL 02E B=0 ALL 32F JC \$-1B 206 C>TA SIX	0AE A>C ALL 3E0 JNC \$-03 080 C=N ALL 0C3 JNC \$+18 158 M=C ALL 063 JNC \$+0C 0EE C>B ALL 03C RCR 3	10E A=C ALL 3E0 RTN 1C6 A=A-C SIX 198 C=M ALL 378 READ 13(c) 366 ?AOC SIX 2F0 WRITE DATA 368 WRIT 13(c)	270 RAM SLCT 248 SETF 9 07F JC \$+0F 206 C=C+A SIX 0E6 C>B SIX 3E3 JNC \$-04 198 C=M ALL 06E A>B ALL	038 READ 0(T) 0A6 A>C SIX 108 SETF 8 037 JC \$+06 208 JNC \$+05 0AE A>C ALL 0EE C>B ALL 244 CLRF 9	3D4 R=R-1 070 N=C ALL 0CE C=B ALL 24C ?FSET 9 1BC RCR 11 270 RAM SLCT 141 ?NC XQ 035 ?NC GO	394 ?R= 0 285 ?NC XQ 0AE A>C ALL 009 ?C GO 21A C=C+A M 0FA C>B M 0A4 ->2950 0BE ->2F0D	3B8 JNC \$-09 014 ->05A1 158 M=C ALL 083 ->2002 0EE C>B ALL 1BC RCR 11 0CC ?FSET 10 3B8 READ 14(d)	35C R= 12 158 M=C ALL 24E C=A-C ALL 248 SETF 9 2FO WRITE DATA 21A C=C+A M 017 JC \$+02 358 ST-C X	2F2 ?C\$0 P-Q 0C1 JNC \$-02 05C ->1730 03C RCR 3 3E0 RTN 0EE C>B ALL 03C RCR 3 126 A=A+B SIX 048 SETF 4	360 ?C RTN 05C ->1730 0E6 C>B SIX 378 READ 13(c) 0AE A>C ALL 0E6 C>B SIX 0E6 A>B ALL 398 C=ST X	0NC R= 10 04E C=0 ALL 1BC RCR 11 206 C=C+A SIX 10C ?FSET 8 038 READ 0(T) 378 READ 13(c) 368 WRIT 14(d)	3E0 RTN 270 RAM SLCT 0EE C>B ALL 1BC RCR 11 -033 JNC \$+06 0EE C>B ALL 206 C=C+A SIX 3E0 RTN	39C R= 0 08E B=A ALL 378 READ 13(c) 0EE C>B ALL 306 ?A-C SIX 03C RCR 3 03C RCR 3 000 NOP	39C R= 0 08E B=A ALL 378 READ 13(c) 0EE C>B ALL 306 ?A-C SIX 03C RCR 3 03C RCR 3 000 NOP

## 18 BLOCK

0	1	2	3	4	5	6	7
04E C=0 ALL 3D4 R=R-1	326 ?A>B S\$X	28E C=0-C ALL	3D4 R=R-1	198 C=M ALL	262 C=C-1	0R	0EE C>B ALL
018 JNC \$+03 176 A=A+1 XS	3D4 JC \$-05	11E A=C MS	2D4 ?R= 13	046 C=0 S\$X	JF3 JNC \$-02	OAE A>C ALL	
04E C=0 ALL 236 C=C+1 XS	0AE A>C ALL	326 ?A>B S\$X	3C3 JNC \$-08	03E B=0 MS	354 ?R= 12	JSC R= 12	
28E C=C-1 MS 354 ?R= 12	1D8 C>M ALL	03B JNC \$+07	04E C=0 ALL	05E C=0 MS	3C8 JNC \$-C7	10E A=C ALL	
35C R= 12 3E3 JNC \$-04	30E ?A>C ALL	1D8 C>M ALL	0AE A>C ALL	1D8 C>M ALL	198 C=M ALL	1E6 C=C+C S\$X	
050 LDR- 1 0EE C>B ALL	023 JNC \$+04	2FC RCR 13	198 C=M ALL	206 C=C+A S\$X	0AE A>C ALL	06B JNC \$+0D	
018 JNC \$+03 2EE ?C\$0 ALL	1D8 C>M ALL	1D8 C>M ALL	0EE C>B ALL	25E C=A-C MS	1D8 C>M ALL	23A C=C+1 M	
02E B=0 ALL 16B JNC \$+2D	0AE A>C ALL	06E A>B ALL	12E A=A+B ALL	013 JNC \$+02	198 C=M ALL	05B JNC \$+0B	
07A A>B M 1D8 C>M ALL	02B JNC \$+05	1A6 A=-1 S\$X	276 C=C-1 XS	29E C=0- C MS	2FE ?C\$0 MS	0C6 C=B S\$X	
1D8 C>M ALL 06E A>B ALL	1D8 C>M ALL	06E A>B ALL	276 C=C-1 XS	00E A=0 ALL	01B JNC \$+03	226 C=C+1 S\$X	
198 C=M ALL 2EE ?C\$0 ALL	0AE A>C ALL	326 ?A>B S\$X	276 C=C-1 XS	1D8 C>M ALL	166 A=A+1 S\$X	222 C=C+1 0R	
046 C=0 S\$X 14B JNC \$+29	1D8 C>M ALL	04B JNC \$+09	000 NOP	2DC R= 13	3CE RSHFC ALL	0DE C=B MS	
03E B=0 MS 326 ?A>B S\$X	06E A>B ALL	166 A=A+1 S\$X	OCB JNC \$+19	3DC R=R+1	0AE A>C ALL	06E A>B ALL	
05E C=0 MS 087 JC \$+10	19E A=A-B MS	3CE RSHFC ALL	02E B=0 ALL	38E RSHFA ALL	JSC R= 12	2FA ?C\$0 M	
1D8 C>M ALL 1D8 C>M ALL	JSE ?A\$0 MS	0BE A>C MS	07A A>B M	013 JNC \$+02	JAA ?A\$0	R- 360 ?C RTN	
31C R= 1 06E A>B ALL	05B JNC \$+0B	11E A=C MS	1D8 C>M ALL	12E A=A+B ALL	0BF JC \$+17	04E C=0 ALL	

## 18 BLOCK

8	9	A	B	C	D	E	F
01E A=0 MS 04E C=0	ALL 1D8 C>M ALL	04E C=0 ALL	0AE A>C ALL	013 JNC \$+02	JF3 JNC \$-02	10E A=C ALL	
3E0 RTN 35C R= 12	246 C=A-C S\$X	013 JNC \$+02	35E ?A\$0 MS	2BA C=C-1 M	14E A=A+C ALL	08E B=A ALL	
0C6 C=B S\$X 050 LDR- 1	25E C=A-C MS	222 C=C+1 0R	01B JNC \$+03	14E A=A+C ALL	3EE LSHFA ALL	01C R= 3	
3C3 JNC \$-08 0EE C>B	013 JNC \$+02	18E A=A-B ALL	085 ?NC GO	39C R= 0	394 ?R= 0	3EE LSHFA ALL	
06E A>B ALL 0AE A>C ALL	29E C=C-0-C MS	JF3 JNC \$-02	0A2 >282D	342 ?A\$0 0R	39C ?C GO	38A RSHFA R-	
363 JNC \$-14 1D8 C>M ALL	1D8 C>M ALL	12E A=A+B ALL	03E B=0 MS	017 JC \$+02	063 >-1872	35C R= 12	
342 ?A\$0 PR 0AE A>C ALL	05E C=0 MS	3EE LSHFA ALL	0CE C-B ALL	3AE RSHFB ALL	3D4 R=R-1	34A ?A\$0 R-	
34F JC \$-17 033 JNC \$+06	0AE A>C ALL	3D4 R=R-1	06E A>B ALL	38E RSHFA ALL	JCA RSHFC R-	397 JC \$-0E	
266 C=C-1 S\$X 02E B=0	06E A>B ALL	2D4 ?R= 13	1EE C=C+C ALL	04E C=0 ALL	3BB JNC \$-09	166 A=A+1 S\$X	
3E0 LSHFA R- 07A A>B M	32E ?A>B ALL	3D3 JNC \$-06	1EE C=C+C ALL	06E A>B ALL	1A6 A=A-1 S\$X	306 ?A>C S\$X	
3E3 JNC \$-04 1D8 C>M ALL	02B JNC \$+05	0AE A>C ALL	20E C=C+A ALL	2DC R= 13	03B JNC \$+07	01B JNC \$+03	
02E B=0 ALL 198 C=M ALL	1D8 C>M ALL	198 C=M ALL	0EE C>B ALL	150 LDR- 5	2C3 JNC \$-28	236 C=C+1 XS	
0FA C>B M 04E C=0 S\$X	3EE LSHFA ALL	1C1 ?NC GO	05A C=0 M	3CE RSHFC ALL	2FE ?C\$0 MS	3E0 RTN	
0AE A>C ALL 03E B=0 MS	266 C=C-1 S\$X	062 >-1870	10E A=C ALL	053 JNC \$+0A	2B7 JC \$-2A	04E C=0 ALL	
04E C=0 ALL 2FA ?C\$0 M	1D8 C>M ALL	02E B=0 ALL	1EE C=C+C ALL	222 C=C+1 0R	ZF6 ?C\$0 XS	222 C=C+1 0R	
1D8 C>M ALL 123 JNC \$+24	35C R= 12	0FA C>B M	1E6 C=C+C S\$X	1CE A=A-C ALL	2A7 JC \$-2C	3CE RSHFC ALL	

## 19 BLOCK

0	1	2	3	4	5	6	7
23E C=C+1 MS 226 C=C+1 S\$X	04E C=0 ALL	07E A>B MS	198 C=M ALL	360 ?C RTN	37E ?A>C MS	JFB JNC \$-01	
0EE C>B ALL 12E A=A+B ALL	270 RAM SLCT	3BB JNC \$-09	394 ?R= 0	226 C=C+1 S\$X	013 JNC \$+02	12E A=A+B ALL	
2C2 ?B\$0 PR 3FB JNC \$-01	09E B=A MS	04E C=0 ALL	01F JC \$+03	2E6 ?C\$0 S\$X	048 SETF 4	3EE LSHFA ALL	
01B JNC \$+03 06A A>B R-	0CE C=B ALL	270 RAM SLCT	3D4 R=R-1	03B JNC \$+07	246 C=A-C S\$X	266 C=C-1 S\$X	
3AA RSHFB R- 262 C=C-1 0R	268 WRIT 9(0)	278 READ 9(0)	04A C=0 R-	266 C=C-1 S\$X	023 JNC \$+04	3DB JNC \$-05	
226 C=C+1 S\$X 36B JNC \$-13	2B8 READ 10(+)	0FE C>B MS	1C9 ?NC GO	3EE LSHFA ALL	186 A=A-1 XS	38E RSHFA ALL	
00E A=0 ALL 27E C=C-1 MS	046 A>C S\$X	1D8 C>M ALL	062 >-1872	01E A=0 MS	0AE A>C ALL	080 C=N ALL	
1C2 A=A-C ER 35B JNC \$-15	106 A=C S\$X	2B8 READ 10(+)	02E B=0 ALL	3D4 R=R-1	093 JNC \$+12	1B3 ?NC XQ	
023 JNC \$+04 3EE LSHFA ALL	248 WRIT 10(+)	0DE C=B MS	34E ?A\$0 ALL	02E B=0 ALL	060 >-186D	060 >-186D	
3E0 LSHFA ALL 086 B=A S\$X	3E0 RTN	1D8 C>M ALL	0AE A>C ALL	3CF JC \$-07	0F0 C>N ALL	04C ?FSET 4	
12E A=A+B ALL 05A C=0 M	07E A>B MS	3E0 RTN	2DC R= 13	266 C=C-1 S\$X	0DE A>C MS	JAO ?NC RTN	
3FB JNC \$-01 05E C=0 MS	278 READ 9(0)	11D ?NC XQ	0CE C=B ALL	3E0 RTN	0F0 C>N ALL	2FA ?C\$0 M	
1DE A=A-C MS 12A A=A+B R-	0EE C>B ALL	064 >-1947	1D8 C>M ALL	176 A=A+1 XS	01E A=0 MS	JAO ?NC RTN	
033 JNC \$+06 14E A=A+C ALL	268 WRIT 9(0)	08C ?FSET 5	06E A>B ALL	2FA ?C\$0 M	006 A=0 S\$X	10E A=C M	
38A RSHFA R- 08A A>C M	2B8 READ 10(+)	1B5 ?NC GO	0CE C=B ALL	03B JNC \$+07	0FA C>B M	0F8 READ 3(X)	
16E A=A+1 ALL 3E0 RTN	046 A>C S\$X	062 >-186D	2F6 ?C\$0 XS	236 C=C+1 XS	18E A=A-B ALL	01D ?NC GO	

## 19 BLOCK

8	9	A	B	C	D	E	F
062 >-1807 060 >-184D	3E0 RTN	35C R= 12	3E0 RTN	3D4 R=R-1	064 >-19E5	20E C=C+A ALL	
00E A=0 ALL 269 ?NC XQ	35C R= 12	3E0 RTN	266 C=C-1 S\$X	3D4 R=R-1	3EE LSHFA ALL	046 C=0 S\$X	
269 ?NC XQ 064 >-199A	04E C=0 ALL	2FA ?C\$0 M	3D3 JNC \$-06	39D ?NC XQ	14E A=A+C ALL	JEO RTN	
064 >-199A 275 ?NC GO	1D0 LDR- 7	3A0 ?NC RTN	04E C=0 ALL	064 >-19E7	0EE C>B ALL	14A A=A+C R-	
0EE C>B ALL 062 >-189D	210 LDR- 8	10E A=C ODA C=B M	10E A=C ALL	10E A=C ALL	393 JNC \$-0E	3CA RSHFC R-	
080 C=N ALL 04E C=0 ALL	150 LDR- 5	08E B=A ALL	08C ?FSET 5	0CE C=B ALL	20A C=C+A R-	2E9 ?C\$0 R-	
13D ?NC XQ 35C R= 12	0D0 LDR- 3	226 C=C+1 S\$X	093 JNC \$+12	195 ?NC GO	3EF JC \$-03		
060 >-184F 226 C=C+1 S\$X	250 LDR- 9	226 C=C+1 S\$X	3DC R=R+1	062 >-1865	10A A=C R-	3E0 RTN	
255 ?NC XQ 250 LDR- 9	210 LDR- 8	106 A=C S\$X	2D4 ?R= 13	00E A=0 ALL	3CA RSHFC R-	2B6 C=C-1 MS	
064 >-1995 3E0 RTN	050 LDR- 1	35C R= 12	023 JNC \$+04	395 ?NC XQ	1EA C=C+C R-	06E A>B ALL	
269 ?NC GO 04E C=0 ALL	190 LDR- 6	146 A=A+C S\$X	39D ?NC XQ	064 >-19E5	1EA C=C+C R-	08E B=A ALL	
062 >-189A 1D8 C>M ALL	0D0 LDR- 3	047 JC \$+08	064 >-19E7	3DC R=R+1	24A C=A-C R-	1D8 C>M ALL	
10E A=C ALL 285 ?NC XQ	0D0 LDR- 3	3D4 R=R-1	028 JNC \$+05	2D4 ?R= 13	08C ?FSET 5	198 C=M ALL	
255 ?NC XQ 064 >-19A1	250 LDR- 9	394 ?R= 0	3DC R=R+1	017 JC \$+02	033 JNC \$+06	38E RSHFA ALL	
064 >-1995 1EE C=C+C ALL	1D0 LDR- 7	01B JNC \$+03	39D ?NC XQ	3DC R=R+1	00E A=0 ALL	34E ?A\$0 ALL	
135 ?NC XQ 3CE RSHFC ALL	150 LDR- 5	0CE C=B ALL	064 >-19E7	395 ?NC XQ	106 A=C S\$X	027 JC \$+04	

## 1A BLOCK

0	1	2	3	4	5	6	7
198 C=M ALL 008 SETF 3	3DB JNC 8-05	JEE LSHFA ALL	36B JNC 8-13	28C ?FSET 7	20B JNC 8-3F	262 C=C-1 PR	
10E A=C ALL 01E A=0 MS	2F5 ?NC X0	266 C=C-1 S8X	04E C=0 ALL	01B JNC 8+03	0EE C>B ALL	08E B=A ALL	
30J RTN 01A A=0 M	068 ->1A8D	053 JNC 8+0A	05C R= 12	28E C=-C-1 MS	04C ?FSET 4	188 C>M ALL	
226 C=C+1 S8X 06E A>B ALL	1A3 JNC 8+34	09C R= 5	26A C=C-1 R<-	11E A=C MS	028 JNC 8+05	198 C=M ALL	
3CB JNC 8-07 OCE C=B ALL	2B9 ?NC X0	2E2 ?C80 ER	10E A=C ALL	211 ?NC GO	229 ?NC X0	083 JNC 8+10	
35C R= 12 1E6 C=C+C S8X	068 ->1AAE	02B JNC 8+05	21C R= 2	062 ->1A8A	068 ->1A8A	226 C=C+1 S8X	
162 A=A+1 ER 073 JNC 8+0E	15C R= 6	262 C=C-1 ER	050 LDER- 1	222 C=C+1 ER	0AE A>C ALL	38E RSHFA ALL	
06E A>B ALL 0CE C=B ALL	033 JNC 8+06	2E2 ?C80 ER	00C ?FSET 3	18E A=A-B ALL	06E A>B ALL	27E C=C-1 MS	
245 ?NC GO 07E JNC 8+09	06E A>B ALL	04F JC 8+09	013 JNC 8+02	3F3 JNC 8-02	2DC R= 13	39B JNC 8-0D	
062 ->1A89 07F JC 8+0F	166 A=A+1 S8X	222 C=C+1 ER	2A6 C=C-1 S8X	12E A=A+B ALL	190 LDER- 6	3CE RSHFC ALL	
02E B=0 ALL 2DC R= 13	3AE RSHFB ALL	35C R= 12	06E A>B ALL	154 R= 6	09C R= 5	3CE RSHFC ALL	
0FA C>B M 3B4 R=R-1	333 JNC 8-1A	123 JNC 8+24	10E A=C ALL	03F JC 8+07	2FA ?C80 M	3CE RSHFC ALL	
0AE A>C ALL 094 ?R= 5	23A C=C+1 M	0AE A>C ALL	04C ?FSET 4	JEE LSHFA ALL	19B JNC 8+33	162 A=A+1 PR	
004 CLRF 3 185 TC GO	18E A=A-B ALL	3FA LSHFA M	01B JNC 8+03	266 C=C-1 S8X	3DC R=R+1	06E A>B ALL	
35E ?A80 MS 068 ->1A61	3F3 JNC 8-02	0AE A>C ALL	009 ?NC X0	3B4 R=R-1	2E2 ?C80 ER	10E A=C ALL	
013 JNC 8+02	226 C=C+1 S8X	12E A=A+B ALL	2E2 ?C80 ER	0EE C>B ALL	033 JNC 8+06	0OC ?FSET 3	

## 1A BLOCK

B	C	A	D	E	F
239 ?C X0	20E C=C+1 ALL	05A C=0 M	0DO LDER- 3	27A C=C-1 M	06B JNC 8+0D
061 ->1B8E 06E A>B ALL	05E C=0 MS	010 LDER- 0	110 LDER- 4	0DO LDER- 1	010 LDER- 0
253 JNC 8-36 3CE RSHFC ALL	10E A=C ALL	090 LDER- 2	23A C=C+1 M	250 LDER- 9	210 LDER- 8
3AE RSHFB ALL 2EE ?C80	00C ?FSET 3	150 LDER- 5	0D4 R= 10	0DO LDER- 3	150 LDER- 5
27E C=C-1 MS 027 JC 8+04	01B JNC 8+03	210 LDER- 8	0E7 JC 8+1C	050 LDER- 1	0DO LDER- 3
3F3 JNC 8-02 198 C=M ALL	3E1 ?NC X0	150 LDER- 5	254 R= 9	110 LDER- 4	190 LDER- 6
12E A=A+B ALL 0AE A>C ALL	064 ->1F8	010 LDER- 0	13F JC 8+27	1D0 LDER- 7	210 LDER- 8
17E A=A+1 MS 3E0 RTN	04C ?FSET 4	250 LDER- 9	114 R= 8	050 LDER- 1	0DO LDER- 0
198 C=M ALL 166 A=A+1 S8X	01F JC 8+03	090 LDER- 2	18F JC 8+31	210 LDER- 8	32B JNC 8-1B
32B JNC 8-1B 3CB JNC 8-07	001 ?NC X0	250 LDER- 9	294 R= 7	010 LDER- 0	15C R= 6
1D8 C>M ALL 28E C=0-C ALL	060 ->1B00	250 LDER- 9	1CF JC 8+39	150 LDER- 5	0DO LDER- 3
198 C=M ALL 1D8 C>M ALL	141 ?NC GO	110 LDER- 4	154 R= 6	190 LDER- 6	0DO LDER- 3
08E B=A ALL 226 C=C+1 S8X	06A ->1A50	10B JNC 8+21	1FF JC 8+3F	35C R= 12	38B JNC 8-0F
0EE C>B ALL 295 ?NC GO	0EE C>B ALL	04E C=0 ALL	39C R= 0	0EE C>B ALL	11C R= 8
1EE C=C+C ALL 062 ->1A85	JSC R= 12	354 R= 12	0DO LDER- 3	3E0 RTN	0DO LDER- 3
1EE C=C+C ALL 06E A>B ALL	090 LDER- 2	097 JC 8+12	15C R= 6	000 NOP	0DO LDER- 3

## 1B BLOCK

0	1	2	3	4	5	6	7
150 LDER- 5 26B JNC 8-33	033 JNC 8+06	2FE ?C80 MS	2FE ?C80 MS	083 JNC 8+10	35C R= 12	001 ?NC X0	
25C R= 9 02E B=0 ALL	3D9 ?NC GO	013 JNC 8+02	307 JC 8-20	146 A=A+C S8X	0CE C=B ALL	060 ->1B00	
2DB JNC 8-25 0FA C>B M	062 ->1B3	288 SETF 7	02E B=0 ALL	01B JNC 8+03	262 C=C-1 ER	2B3 JNC 8-2A	
05C R= 4 0AE A>C ALL	2E6 ?C80 S8X	088 READ 2(Y)	211 ?NC GO	246 C=C-1 S8X	0AE A>C ALL	02E B=0 ALL	
0DO LDER- 3 089 ?NC X0	3EB JNC 8-03	05E C=0 MS	062 ->1B84	008 SETF 3	34E ?A80 ALL	0FA C>B M	
0DO LDER- 3 064 ->1922	266 C=C-1 S8X	02E B=0 ALL	02E B=0 ALL	00E A=0 ALL	34D ?NC GO	10E A=C ALL	
0DO LDER- 3 088 READ 2(Y)	3EE LSHFA ALL	0FA C>B M	0FA C>B M	05E C=0 MS	06E ->1BD3	0AE A>C ALL	
0DO LDER- 3 361 ?NC X0	35A ?A80 M	0AE A>C ALL	0AE A>C ALL	05A C=0 M	342 ?A80 PR	10E A=C ALL	
050 LDER- 1 050 ->1AD8	3DF JC 8-05	308 SETF 1	03E B=0 MS	35C R= 12	027 JC 8+04	226 C=C+1 S8X	
11C R= 8 10E A=C ALL	2E6 ?C80 S8X	2DA ?B80 M	35E ?A80 MS	184 A=A-B R=	266 C=C-1 S8X	1E6 C=C+C S8X	
29B JNC 8-2D 0FB READ 3(X)	04F JC 8+09	077 JC 8+0E	2BF JC 8-29	262 C=C-1 PR	3EE LSHFA ALL	3B3 JNC 8-0A	
21C R= 2 35E ?A80 MS	0BE A>C MS	0D1 ?NC X0	2DA ?B80 M	222 C=C+1 PR	3E3 JNC 8-04	35E ?A80 MS	
0DO LDER- 3 0BB JNC 8+17	11E A=C MS	064 ->1934	2AB JNC 8-2B	08E B=A ALL	1D8 C>M ALL	057 JC 8+0A	
0DO LDER- 3 006 A=0 S8X	1FE C=C+C MS	2FA ?C80 M	046 A>C S8X	1D8 C>M ALL	245 ?NC X0	0AE A>C ALL	
0DO LDER- 3 0BA A>C M	1FE C=C+C MS	31B JNC 8-1D	106 A=C S8X	198 C=M ALL	060 ->1A89	3E5 ?NC X0	
29C R= 7 2F6 ?C80 XS	21E C=C+A MS	198 C=M ALL	2E6 ?C80 S8X	18B JNC 8+31	08B JNC 8+11	064 ->1F9	

## 1B BLOCK

B	C	A	D	E	F
35C R= 12 27E C=C-1 MS	JEA LSHFA R<-	2D4 ?R= 13	01C R= 3	01B JNC 8+03	0EE C>B ALL
04E C=0 ALL 3F3 JNC 8-02	0AE A>C ALL	3B8 JNC 8-09	345 ?NC X0	28E C=-C-1 MS	340 ?NC RTN
0A6 A>C S8X 198 C=M ALL	39C R= 0	02E B=0 ALL	06C ->1B89	000 NOP	04E C=0 ALL
10E A=C ALL 12E A=A+B ALL	1D0 LDER- 7	39C R= 0	2FA ?C80 M	1B5 ?NC X0	1D8 C>M ALL
05E A>B ALL 1BE A=A-1 MS	286 C=C-0 S8X	082 B=A PR	03B JNC 8+07	060 ->1B8D	289 ?NC X0
C3B JNC 8+07 233 JNC 8-3A	2C6 ?B80 S8X	12E A=A+B ALL	38E RSHFA ALL	30C ?FSET 1	06E A>B ALL
008 SETF 3 23E C=C+1 MS	1E3 JNC 8+3C	38E RSHFA ALL	3DB JNC 8-05	02B JNC 8+19	0EE A>C ALL
3CB JNC 8-07 06E A>B ALL	15C R= 6	2B5 ?NC X0	0EE C>B ALL	0D1 ?NC X0	21B JNC 8-3D
154 R= 6 3EE LSHFA ALL	38E RSHFA ALL	068 ->1AAD	0DB JNC 8+1B	064 ->1934	062 ->189D
1F7 JC 8+3E 3D4 R=R-1	0EE C>B ALL	00C ?FSET 3	38E RSHFA ALL	149 ?NC X0	00E A=0 ALL
3D4 R=R-1 094 ?R= 5	2F5 ?NC X0	037 JC 8+06	023 JNC 8+01	060 ->1B52	262 C=C-1 PR
23E C=C+1 MS 20B JNC 8-3F	068 ->1ABD	06E A>B ALL	35E ?A80 MS	198 C=M ALL	289 ?NC X0
226 C=C+1 S8X 0AE A>C ALL	3A5 ?NC X0	18E A=A-B ALL	3EF JC 8-03	042 C=0 PR	068 ->1AAE
3DB JNC 8-05 0BE B=A ALL	06C ->1B89	06E A>B ALL	266 C=C-1 S8X	035 ?NC GO	080 C=N ALL
273 JNC 8-32 3EA LSHFA R<-	2FA ?C80 M	12E A=A+B ALL	05E C=0 MS	06A ->1AO	226 C=C+1 S8X
39E RSHFA ALL 3EA LSHFA R<-	0E3 JNC 8+1C	06E A>B ALL	00C ?FSET 3	1A6 A=A-1 S8X	340 ?NC RTN

## 1C BLOCK

0	1	2	3	4	5	6	7
000 NOP	00C 12 L	012 18 R	00E 14 N	016 22 U	110 272 P	119 281 Y	170 PUSH ADR
000 NOP	010 16 P	00F 15 R	005 5 X	001 1 A	001 1 A	005 5 E	1BC RCR 11
000 NOP	008 8 H	012 18 R	018 24 X	014 20 T	003 3 K	013 19 S	15C R= 6
080 C=N ALL	001 1 A	10D 269 M	009 9 I	005 5 T	00B 11 I	10E 270 N	050 LDOR- 1
009 ?NC GO	020 32	005 5 E	013 19 S	10F 271 O	009 9 G	00F 15 Q	310 LDOR- C
046 ->1102	004 4 D	00D 13 M	014 20 T	015 21 U	00E 14 R	112 274 R	10E A=C ALL
248 SETF 9	001 1 A	00F 15 R	005 5 E	014 20 T	007 7 G	001 1 A	JC1 ?NC XQ
016 A=0 XS	014 20 T	012 18 R	00E 14 N	020 32 F	114 276 T	009 13 M	080 ->2CF0
176 A=A+1 XS	001 1 A	019 25 Y	014 20 T	00F 15 F	012 18 R	112 274 R	0AE A>C ALL
316 ?A<C XS	104 260 D	020 32 L	10E 270 M	006 6 F	019 25 Y	00F 15 Q	330 FETCH S&X
381 ?C GO	001 1 A	00C 12 L	015 21 U	020 32 F	020 32 Y	00D 13 M	27A C=C-1 M
008 ->02E0	014 20 T	00F 15 S	00C 12 L	012 18 R	001 1 A	108 SETF 8	106 A=C S&X
270 RAM SLCT	001 1 A	013 19 S	00C 12 L	001 1 A	007 7 G	180 POP ADR	056 C=0 XS
1C1 ?NC GO	020 32	014 20 T	110 272 P	00E 14 N	001 1 A	260 SETHX	348 WRIT 14(d)
05A ->1670	005 5 E	10E 270 N	012 18 R	007 7 G	009 9 I	330 FETCH S&X	356 ?A&0 XS
101 257 A	012 18 R	00F 15 O	009 9 I	005 5 E	00E 14 M	23A C=C+1 M	3D3 JNC *-06

## 1C BLOCK

8	9	A	B	C	D	E	F
149 ?NC XQ	38B ?NC XQ	023 JNC \$+04	088 READ 2(Y)	070 ->1CE3	266 C=C-1 S&X	025 ?NC XQ	04E C=0 ALL
024 ->0952	070 ->1CEF	389 ?NC XQ	135 ?NC XQ	0FO C>N ALL	270 RAM SLCT	060 ->1809	270 RAM SLCT
10C ?FSET 8	01B JNC \$+03	070 ->1CEE	060 ->184D	04E C=0 ALL	0EE C>B ALL	01B JNC \$+03	378 READ 13(c)
340 ?NC RTN	385 ?NC XQ	01B JNC \$+03	369 ?NC XQ	270 RAM SLCT	038 READ 0(T)	01D ?NC XQ	1BC RCR 11
38D ?NC XQ	070 ->1CED	381 ?NC XQ	070 ->1CDA	0F8 READ 3(X)	3D4 R=R-1	060 ->1807	226 C=C+1 S&X
1BC ->6FE3	369 ?NC XQ	070 ->1EC	34D ?NC XQ	128 WRIT 4(L)	394 PR= 0	045 ?NC XQ	3DC R=R+1
1F1 ?NC GO	070 ->1CDA	381 ?NC XQ	070 ->1CEB	00D ?NC GO	3B3 JNC \$-0A	050 ->1429	2D4 ?R= 13
00E ->037C	38D ?NC XQ	070 ->1CEO	381 ?NC XQ	072 ->1C03	04E C=0 ALL	2F0 WRITE DATA	3EB JNC \$-03
321 ?NC XQ	070 ->1CE3	046 C=0 S&X	070 ->1CEO	19D ?NC XQ	270 RAM SLCT	35C R= 12	266 C=C-1 S&X
070 ->1CCB	080 C=N ALL	270 RAM SLCT	00E A=0 ALL	058 ->1667	113 JNC \$+22	3E0 RTN	270 RAM SLCT
0B8 READ 2(Y)	10E A=C ALL	0F8 READ 3(X)	162 A=A+1 OR	15C R= 6	08C ?FSET 5	3D4 R=R-1	038 READ 0(T)
0F0 C>N ALL	135 ?NC XQ	04C ?FSET 4	369 ?NC XQ	0EE C>B ALL	3A0 ?NC RTN	3D4 R=R-1	2A0 SETDEC
0B0 C=N ALL	060 ->184D	01F JC \$+03	070 ->1CDA	361 ?NC XQ	0BE A>C MS	3D4 R=R-1	35C R= 12
10E A=C ALL	369 ?NC XQ	048 SETF 4	349 ?NC XQ	050 ->14D8	2B2 C=C-1 MS	3D4 R=R-1	3E0 RTN
04C ?FSET 4	070 ->1CDA	2EB JNC \$-23	070 ->1CEA	260 SETHX	0BE A>C MS	3D4 R=R-1	321 ?NC XQ
023 JNC \$+04	04C ?FSET 4	10E A=C ALL	38D ?NC XQ	0EE C>B ALL	3E0 RTN	260 SETHX	070 ->1CCB

## 1D BLOCK

0	1	2	3	4	5	6	7
385 ?NC XQ	084 CLRF 5	01B JNC \$+03	081 ?NC XQ	305 ?NC XQ	05E C=0 MS	060 ->18C1	3E0 RTN
070 ->1CED	321 ?NC XQ	3BD ?NC XQ	064 ->1920	060 ->18C1	0FO C>N ALL	0AE A>C ALL	ALL
01D ?NC XQ	070 ->1CCB	070 ->1CEF	349 ?NC XQ	08C ?FSET 5	10E A=C ALL	288 SETF 7	
074 ->1D07	381 ?NC XQ	10E A=C ALL	070 ->1CEA	360 ?C RTN	135 ?NC XQ	0B8 READ 2(Y)	2FE ?C&0 MS
0F0 C>N ALL	070 ->1CEC	135 ?NC XQ	02E B=0 ALL	0FO C>N ALL	060 ->184D	0AE A>C ALL	013 JNC \$+02
3BD ?NC XQ	10E A=C ALL	060 ->184D	0FA C>B M	088 SETF 5	089 ?NC XQ	261 ?NC XQ	148 SETF 6
070 ->1CEF	349 ?NC XQ	2BE C=C-1 MS	10E A=C ALL	3B9 ?NC XQ	064 ->1922	060 ->1898	05E C=0 MS
10E A=C ALL	070 ->1CEA	0BE A>C MS	009 ?NC XQ	070 ->1CEE	0B8 READ 2(Y)	2FA ?C&0 M	0FO C>N ALL
349 ?NC XQ	135 ?NC XQ	0C9 ?NC XQ	060 ->1802	26B JNC \$-33	10E A=C ALL	01F JC \$+1B	0B0 C=N ALL
070 ->1CEA	060 ->184D	064 ->1932	0C9 ?NC XQ	0B0 C=N ALL	135 ?NC XQ	00E A=0 ALL	2FA ?C&0 M
0EE C>B ALL	081 ?NC XQ	031 ?NC XQ	064 ->1932	2FA ?C&0 M	060 ->184D	0CB JNC \$+19	3A0 ?NC RTN
04E C=0 ALL	064 ->1920	060 ->180C	24D ?NC XQ	133 JNC \$+26	0D1 ?NC XQ	38C ?FSET 0	00E A=0 ALL
270 RAM SLCT	08C ?FSET 5	3A9 ?NC XQ	060 ->1893	2FE ?C&0 MS	064 ->1934	01F JC \$+03	1EB JNC \$+3D
0EE C>B ALL	027 JC \$+04	070 ->1CEA	2FE ?C&0 MS	023 JNC \$+04	031 ?NC XQ	388 SETF 0	1AD ?NC XQ
261 ?NC GO	385 ?NC XQ	269 ?NC XQ	289 ?C GO	288 SETF 7	060 ->180C	3E0 RTN	074 ->1D6B
062 ->1898	070 ->1CED	060 ->189A	003 ->00A2	388 SETF 0	305 ?NC XQ	384 CLRF 0	3E3 JNC \$-04

## 1D BLOCK

8	9	A	B	C	D	E	F
02E B=0	ALL 1E6 C=C+0 S&X	00E A=0 ALL	05E C=0 MS	0AE A>C ALL	23E C=C+1 MS	078 ->1E38	001 ?NC XQ
10E A=C	ALL 3B1 ?C GO	1A6 A=A-1 S&X	226 C=C+1 S&X	1DB C>M ALL	1DB C>M ALL	0EE C>B ALL	060 ->1800
07A A>B	M 077 ->1DEC	0AE A>C ALL	2E6 ?C&0 S&X	222 C=C+1 OR	06E A>B ALL	013 JNC \$+02	0A9 ?NC XQ
2FE ?C&0	HS 346 ?A&0 S&X	03D ?NC GO	043 JNC \$+08	11E A=C MS	3EE LSHFA ALL	12E A=A+B ALL	064 ->192A
04B JNC \$+09	08F JC \$+11	07A ->1EOF	23E C=C+1 MS	1D8 C>M ALL	3D4 R=R-1	262 C=C-1 OR	009 ?NC XQ
148 SETF 6	OCE C=B ALL	30C ?FSET 1	3D4 R=R-1	3AE RSHFB ALL	154 ?R= 6	3F3 JNC \$-02	060 ->1802
20C ?FSET 2	2CE ?B&0 ALL	30B ?C GO	154 ?R= 6	3AE RSHFB ALL	3B3 JNC \$-0A	38E RSHFA ALL	0D1 ?NC XQ
033 JNC \$+06	323 JNC \$-1C	063 ->18C3	3D3 JNC \$-06	1B E A=A-1 MS	0EE C>B ALL	042 C=0 OR	064 ->1934
38C ?FSET 0	35C R= 12	239 ?NC XQ	0EE C>B ALL	3EB JNC \$-03	2BD ?NC XQ	2FA ?C&0 M	149 ?NC XQ
023 JNC \$+04	262 C=C-1 OR	060 ->188E	03D ?NC GO	01E A=0 MS	060 ->18AF	11B JNC \$+23	060 ->1852
384 CLRF 0	2EE ?C&0 ALL	1A0 ?NC XQ	07A ->1EOF	12E A=A+B ALL	06E A>B ALL	3DC R=R+1	01E A=0 MS
288 SETF 7	057 JC \$+0A	074 ->1D6B	1DB C>M ALL	0AE A>C ALL	1DB C>M ALL	39B JNC \$-0D	305 ?NC XQ
144 CLRF 6	30C ?FSET 1	06E A>B ALL	00E C=0 ALL	08E B=A ALL	016 C=0 S&X	30C ?FSET 1	060 ->18C1
35C R= 12	307 JC \$-20	OCE C=B ALL	23E C=C+1 MS	1CE A=A-C ALL	29C R= 7	0E3 JNC \$+1C	0B0 C=N ALL
0A6 A>C S&X	283 ?NC XQ	35C R= 12	3CE RSHFC ALL	393 JNC \$-0E	0EE C>B ALL	089 ?NC XQ	05E C=0 MS
106 A=C S&X	064 ->19A1	05A C=0 M	06B JNC \$+0D	1DB C>M ALL	0E1 ?NC XQ	064 ->1922	1DB C>M ALL

## 1E BLOCK

0	1	2	3	4	5	6	7
198 C=M ALL 1B5 ?NC XQ	04C ?FSET 4	060 ->184F	127 JC \$+24	110 LDR- 4	05C R= 4	21C R= 2	
046 C=0 S1X 060 ->186D	087 JC \$+10	14C ?FSET 6	254 ?R= 9	250 LDR- 9	210 LDR- 8	15D ?NC XQ	
24D ?NC XQ 38C ?FSET 0	269 ?NC XQ	013 JNC \$+02	14F JC \$+29	050 LDR- 1	19C R= 11	078 ->1E57	
060 ->1893 03B JNC \$+07	064 ->199A	28E C=-C-1 MS	114 ?R= 8	050 LDR- 1	360 RTN	11C R= 8	
046 A>C S&X 2BE C=-C-1 MS	166 A=A+1 S&X	20C ?FSET 2	167 JC \$+2C	190 LDR- 6	15C R= 6	360 RTN	
106 A=C S&X 0BE A>C MS	166 A=A+1 S&X	360 ?C RTN	39C R= 0	35C R= 12	15D ?NC XQ	208 SETF 2	
1E6 C=C+C S&X 269 ?NC XQ	000 NOP	0F0 C>N ALL	1D0 LDR- 7	360 RTN	078 ->1E57	308 SETF 1	
2A1 ?NC GO 064 ->199A	275 ?NC XQ	3E0 RTN	29C R= 7	190 LDR- 6	39C R= 0	0AE A>C ALL	
076 ->1DA8 031 ?NC XQ	060 ->189D	04E C=0 ALL	3E0 RTN	394 ?R= 0	250 LDR- 9	00E A=0 ALL	
2B1 ?NC GO 060 ->180C	08C ?FSET 5	26E C=-C-1 ALL	0DC R= 10	3F3 JNC \$-02	0DC R= 10	02E B=0 ALL	
076 ->1DAC 28C ?FSET 7	03F JC \$+07	05E C=0 MS	190 LDR- 6	363 JNC \$-14	3E0 RTN	0BA A>C M	
3DC R=R+1 02B JNC \$+05	04E C=0 ALL	354 ?R= 12	190 LDR- 6	11C R= 8	05C R= 4	2FE ?C80 MS	
266 C=C-1 S&X 269 ?NC XQ	05C R= 12	06F JC \$+0D	210 LDR- 8	15D ?NC XQ	043 JNC \$+08		
354 ?R= 12 064 ->199A	266 C=C-1 S&X	194 ?R= 11	190 LDR- 6	078 ->1E57	288 SETF 7		
3EB JNC \$-03 031 ?NC XQ	250 LDR- 9	0EF JC \$+1D	150 LDR- 5	39C R= 0	25C R= 9	30C ?FSET 1	
05E C=0 MS 060 ->180C	13D ?NC XQ	0D4 ?R= 10	090 LDR- 2	150 LDR- 5	3E0 RTN	01B JNC \$+03	

## 1E BLOCK

B	9	A	B	C	D	E	F
38C ?FSET 0	110 LDR- 4	3CE RSHFC ALL	38E RSHFA ALL	047 JC \$+08	31B JNC \$-1D	266 C=C-1 S&X	1D8 C>M ALL
013 JNC \$+02	150 LDR- 5	0EE C>B ALL	3CE RSHFC ALL	388 SETF 0	285 ?NC XQ	000 NOP	0AE A>C ALL
148 SETF 6	0EE C>B ALL	2F6 ?C80 XS	0EE C>B ALL	14C ?FSET 6	064 ->19A1	1B5 ?NC XQ	10E A=C ALL
05E C=0 MS	266 C=C-1 S&X	09F JC \$+13	18E A=A-B ALL	01F JC \$+03	243 JNC \$-38	060 ->186D	226 C=C+1 S&X
0EE C>B ALL	2F6 ?C80 XS	18E A=A-B ALL	05B JNC \$+0B	148 SETF 6	06E A>B ALL	04C ?FSET 4	03B JNC \$+07
04C ?FSET 4	02F JC \$+05	3FB JNC \$-01	12E A=A+B ALL	373 JNC \$-12	18E A=A-B ALL	05F JC \$+0B	06E A>B ALL
345 ?C GO	266 C=C-1 S&X	12E A=A+B ALL	0EE C>B ALL	144 CLRF 6	000 NOP	198 C=M ALL	3EE LSHFA ALL
07B ->1ED1 01B JNC \$+03	3EE LSHFA ALL	198 C=M ALL	363 JNC \$-14	1AD ?NC XQ	1EE C=C+C ALL	03B JNC \$+07	
08C ?FSET 5	226 C=C+1 S&X	266 C=C-1 S&X	0EE C>B ALL	384 CLRF 0	074 ->1D6B	266 C=C-1 S&X	3D4 R=R-1
02B JNC \$+05	38E RSHFA ALL	3DB JNC \$-05	04C ?FSET 4	30C ?FSET 1	03B JNC \$+07	000 NOP	154 ?R= 6
0AE A>C ALL	0EE C>B ALL	04E C=0 ALL	10B JNC \$+21	3C3 JNC \$-08	226 C=C+1 S&X	269 ?NC XQ	1B7 JC \$+36
10E A=C ALL	1D8 C>M ALL	0EE C>B ALL	2E6 ?C80 S&X	28C ?FSET 7	2F6 ?C80 XS	060 ->189A	226 C=C+1 S&X
3CE RSHFC ALL	198 C=M ALL	198 C=M ALL	0F7 JC \$+1E	01B JNC \$+03	027 JC \$+04	269 ?NC XQ	3E3 JNC \$-04
1CE A=A-C ALL	1EE C=C+C ALL	1EE C=C+C ALL	3EE LSHFA ALL	284 CLRF 7	18E A=A-B ALL	064 ->199A	06E A>B ALL
04E C=0 ALL	1EE C=C+C ALL	04C ?FSET 4	0EB JNC \$+1D	32B JNC \$-1B	3B3 JNC \$-04	149 ?NC XQ	04E C=0 ALL
35C R= 12	1EE C=C+C ALL	01B JNC \$+03	38C ?FSET 0	288 SETF 7	12E A=A+B ALL	060 ->1852	0EE C>B ALL

## 1F BLOCK

0	1	2	3	4	5	6	7
0E1 ?NC XQ	04E C=0 ALL	12E A=A+B ALL	198 C=M ALL	064 ->1934	20C ?FSET 2	064 ->1934	35C R= 12
078 ->1E38 35C R= 12	1D8 C>M ALL	20C ?FSET 2	149 ?NC XQ	01F JC \$+03	149 ?NC XQ	26A C=C-1 R<-	
0EE C>B ALL	050 LDR- 1	08E B=A ALL	14F JC \$+29	060 ->1852	38C ?FSET 0	060 ->1852	056 C=0 XS
013 JNC \$+02	1D8 C>M ALL	11E A=C MS	38C ?FSET 0	01F JC \$+03	001 ?NC XQ	10E A=C ALL	
23E C=C+1 MS	39C R= 0	262 C=C-1 BR	13B JNC \$+27	013 JNC \$+02	286 C=C S&X	060 ->1800	08E B=A ALL
18E A=A-B ALL	190 LDR- 6	3AB JNC \$-0B	239 ?NC XQ	0F0 C>N ALL	06E A>B ALL	305 ?NC XQ	3C ?FSET 1
3F3 JNC \$-02	190 LDR- 6	0AE A>C ALL	060 ->188E	28C ?FSET 7	2D4 ?B80 M	060 ->18C1	340 ?NC RTN
12E A=A+B ALL	05B JNC \$+0B	3FA LSHFA M	123 JNC \$+24	013 JNC \$+02	0C3 JNC \$+18	20C ?FSET 2	323 JMC \$-1C
3D4 R=R-1	38A RSHFA R-<	0AE A>C ALL	0B0 C=N ALL	2B8 C=C-1 MS	1D8 C>M ALL	287 JC \$-30	000 NOP
3CE RSHFC ALL	38A RSHFA R-<	0AE A>C ALL	1D8 C>M ALL	0F0 C>N ALL	245 ?NC XQ	239 ?NC XQ	0ED TNC XQ
3EE LSHFA ALL	1B8 A=A-1 MS	10B JNC \$+21	198 C=M ALL	10B JNC \$+21	060 ->18A9	060 ->188E	064 ->193B
154 ?R= 6	3EB JNC \$-03	27E C=C-1 MS	046 C=0 S&X	05E C=0 MS	30C ?FSET 1	14C ?FSET 6	2FA ?C80 M
39B JNC \$-0D	01E A=0 MS	266 C=C-1 S&X	24D ?NC XQ	1D8 C>M ALL	078 JNC \$+0F	340 ?NC RTN	3D4 ?C GO
1D8 C>M ALL	1D8 C>M ALL	01E A=0 MS	060 ->1893	0AE A>C ALL	089 ?NC XQ	2B8 C=C-1 MS	063 ->18C3
38E RSHFA ALL	0AE A>C ALL	38E RSHFA ALL	0F0 C>N ALL	198 C=M ALL	064 ->1922	3E0 RTN	080 C=N ALL
39E RSHFA ALL	24E C=A-C ALL	39B JNC \$-0D	OD1 ?NC XQ	1AE A=A-1 ALL	OD1 ?NC XQ	04E C=0 ALL	04C ?FSET 4

## 1F BLOCK

B	9	A	B	C	D	E	F
19F JC \$+33	050 LDR- 1	013 JNC \$+02	354 ?R= 12	02E B=0 ALL	1EE C=C+C ALL	37C RCR 12	37C RCR 12
10E A=C ALL	210 LDR- 8	38E RSHFA ALL	3AB JNC \$-0B	35C R= 12	3FA LSHFA M	206 C=C+A S&X	348 WRIT 14(d)
01E A=0 MS	090 LDR- 2	226 C=C+1 S&X	113 JNC \$+22	210 LDR- 8	39B JNC \$-0D	37C RCR 12	3E0 RTN
04E C=0 ALL	110 LDR- 4	3F3 JNC \$-02	39C R= 0	35C R= 12	0AE A>C ALL	330 FETCH S&X	130 LDI S&X
35C R= 12	39C R= 0	04E C=0 ALL	042 C=0 BR	0EE C>B ALL	080 C=N ALL	3E0 RTN	02D 45 -
266 C=C-1 S&X	250 LDR- 9	0AE A>C ALL	2E6 ?C80 S&X	322 ?A>B BR	04A C=0 R-<	149 ?NC XQ	39C R= 0
0D0 LDR- 3	269 ?NC XQ	1EE C=C+C ALL	30D ?C GO	027 JC \$+04	31C R= 1	024 ->0952	058 G=C BR+
01D ?NC XQ	060 ->189A	1EE C=C+C ALL	063 ->18C3	30D ?NC GO	050 LDR- 1	388 READ 14(d)	040 SLCT F
060 ->1807 2F6 ?C80 XS	1EE C=C+C ALL	080 C=N ALL	062 ->18C3	090 LDR- 2	23C RCR 2	051 ?NC GO	
04E C=0 ALL	30D ?NC GO	3EE LSHFA ALL	222 C=C+1 BR	22E C=C+1 ALL	1B5 ?NC GO	3D8 C>ST X	086 ->2D14
050 LDR- 1	062 ->18C3	2FC RCR 13	01F JC \$+03	1A2 A=A-1 BR	062 ->184D	38C ?FSET 0	198 C=M ALL
010 LDR- 0	0E0 SLCT P	0AO SLCT P	3DA RSHFC M	3F3 JNC \$-02	080 C=N ALL	01F JC \$+03	3DC R=R+1
1D0 LDR- 7	11C R= 8	0A2 A>C BR	3EB JNC \$+03	1A6 A=A-1 S&X	106 A=C S&X	388 SETF 0	0D0 LDR- 3
010 LDR- 3	0AO SLCT P	0EO SLCT P	0AE A>C ALL	037 JC \$+06	04E C=0 ALL	013 JNC \$+02	3CB JNC \$-07
1D0 LDR- 7	39C R= 0	3CE RSHFC ALL	1A2 A=A-1 BR	1EE C=C+C ALL	130 LDI S&X	384 CLRF 0	006 6 F
110 LDR- 4	06E A>B ALL	3D4 R=R-1	04E C=0 ALL	1EE C=C+C ALL	155 341 U	3D8 C>ST X	0C9 192 E

20 BLOCK            HP41CV SYSTEM ROMS            2:F     DIS-ASSEMBLER LISTINGS 5-AUG-81

0	1	2	3	4	5	6	7	
244 CLRF 9	395 ?NC XQ	0A4 ->29D3	10C ?FSET 8	0A4 ->29CA	0AE A<C	ALL	2F6 ?C80 XS	046 C=0 S\$X
013 JNC \$+02	08C ->2FE5	27E C=C-1 MS	3DF JC \$-05	08A B=A R<-	0FC RCR 10	3B3 JNC \$-0A	08D ?NC XQ	
248 SETF 9	2F0 WRITE DATA	37C RCR 12	198 C=M ALL	141 ?NC XQ	0CA C=B R<-	262 C=C-1 ER	08C ->2323	
1AD ?NC XQ	0B3 JNC \$+16	381 ?NC XQ	2EA ?C80 R<-	0A4 ->2950	070 N=C ALL	0BF JC \$+17	359 ?NC XQ	
070 ->C6B	0D5 ?NC XQ	0BC ->2FEO	02D ?NC GO	0CC ?FSET 10	104 CLRF 8	262 C=C-1 ER	0AA ->29D6	
056 86 V	088 ->2235	08D ?NC XQ	0BE ->2F0B	057 JC \$+0A	080 C=N ALL	0AB JNC \$+15	198 C=M ALL	
239 ?NC XQ	08A B=A R<-	08C ->2323	10A A=C R<-	198 C=M ALL	10A A=C R<-	1F6 C=C+C XS	0AA A<C R<-	
00C ->038E	23E C=C+1 MS	080 C=N ALL	0FC RCR 10	306 ?AC S\$X	08A B=A R<-	02B JNC \$+05	158 M=C ALL	
051 ?NC XQ	023 JNC \$+04	06A A<C R<-	34D ?NC XQ	047 JC \$+08	080 C=N ALL	1F6 C=C+C XS	108 SETF 8	
084 ->2114	2E6 ?C80 S\$X	139 ?NC XQ	0A4 ->29D3	366 ?AC S\$X	0CA C=B R<-	01B JNC \$+03	013 JNC \$+02	
04E C=0 ALL	3D7 JC \$-06	088 ->224E	359 ?NC XQ	02F JC \$+05	070 N=C ALL	2F6 ?C80 XS	104 CLRF 8	
158 M=C ALL	0AB JNC \$+15	373 JNC \$-12	0A4 ->29D6	302 ?AC BR	2E5 ?NC XQ	07F JC \$+0F	080 C=N ALL	
044 CLRF 4	0AA A<C R<-	309 ?NC XQ	0AA A<C R<-	027 JC \$+04	0A4 ->29B9	10C ?FSET 8	10A A=C R<-	
288 SETF 7	10A A=C R<-	050 ->14C2	10A A=C R<-	362 ?AC BR	37C RCR 12	05B JNC \$+0B	07C RCR 4	
3A1 ?NC XQ	070 N=C ALL	04E C=0 ALL	158 M=C ALL	013 JNC \$+02	2E2 ?C80 BR	198 C=M ALL	306 ?AC S\$X	
080 ->20EB	34D ?NC XQ	05B JNC \$+0B	329 ?NC XQ	00A A=0 R<-	01F JC \$+03	10A A=C R<-	10F JC \$+21	

## 20 BLOCK

8	9	A	B	C	D	E	F
366 ?AC S\$X	31C R= 1	046 C=0	S\$X	39C R= 0	07B JNC \$+0F	07C RCR 4	038 READ 0(T)
02F JC \$+05	0A1 ?NC XQ	0FC RCR 10	058 G=C	PR,+ 04A C=0 R<-	0AA A<C R<-	08A ->2EC3	3E0 RTN
302 ?AC PR	08C ->2328	070 N=C ALL	198 C=M ALL	2F0 WRITE DATA	269 ?NC XQ	266 C=C-1 S\$X	139 ?NC XQ
0EF JC \$+1D	198 C=M ALL	08A B=A R<-	270 RAM SLCT	01C R= 3	08C ->239A	270 RAM SLCT	088 ->224E
362 ?AC PR	262 C=C-1 ER	198 C=M ALL	10E A=C ALL	06A A>B R<-	270 RAM SLCT	0EE C>B ALL	23E C=C+1 MS
0DB JNC \$+1B	023 JNC \$+04	10A A=C R<-	038 READ 0(T)	110 LDRR- 4	038 READ 0(T)	2F0 WRITE DATA	037 JC \$+06
3F5 ?NC XQ	262 C=C-1 PR	329 ?NC XQ	08E B=A ALL	01C R= 3	39C R= 0	0EE C>B ALL	1FE C=C+C MS
0A8 ->2AFD	262 C=C-1 PR	0A4 ->29CA	38E RSHFA ALL	302 ?AC BR	098 C=6 PR,+ 3C3 JNC \$-08	1FE C=C+C MS	
0B0 C=N ALL	26E C=C-1 ALL	0BD ?NC XQ	31C R= 1	38B JNC \$-09	2F0 WRITE DATA	046 C=0 S\$X	1FE C=C+C MS
0AA A<C R<-	262 C=C-1 PR	08C ->232F	1B6 A=A-1 XS	046 A>C S\$X	046 C=0 S\$X	270 RAM SLCT	281 ?C 60
070 N=C ALL	158 M=C ALL	06A A>B R<-	03F JC \$+07	266 C=C-1 S\$X	270 RAM SLCT	378 READ 13(c)	083 ->20AC
2E5 ?NC XQ	0B0 C=N ALL	2DB JNC \$-25	1B6 A=A-1 XS	270 RAM SLCT	378 READ 13(c)	01C R= 3	198 C=M ALL
0A4 ->29B9	36A ?AC R<-	020 X0->GO	3DC R=R+1	10A A=C R<-	0A6 A>C S\$X	110 LDRR- 4	10A A=C R<-
0EA C>B RK-	377 JC \$-12	0B0 C=N ALL	3DC R=R+1	04E C=0 ALL	368 WRIT 13(c)	270 RAM SLCT	07C RCR 4
198 C=M ALL	155 ?NC GO	270 RAM SLCT	3DB JNC \$-05	2F0 WRITE DATA	02E B=0 ALL	01C R= 3	0AA A<C R<-
270 RAM SLCT	082 ->2055	038 READ 0(T)	102 A=C PR	198 C=M ALL	366 ?AC S\$X	10A A=C R<-	269 ?NC XQ

## 21 BLOCK

0	1	2	3	4	5	6	7
08C ->239A	222 C=C+1 PR	31C R= 1	3E0 RTN	070 N=C ALL	000 NOP	22E C=C+1 ALL	20C ?FSET 2
0FC RCR 10	10D ?C 60	2EA ?C80 R<-	27E C=C-1 MS	155 ?NC XQ	000 NOP	158 M=C ALL	027 JC \$+04
34D ?NC XQ	0AF ->2B77	027 JC \$+04	2EE ?C80 ALL	084 ->2155	000 NOP	0AE A>C ALL	3D5 ?NC XQ
0A4 ->29D3	3E0 RTN	17C RCR 6	3A0 ?NC RTN	2DE ?B80 MS	000 NOP	2F0 WRITE DATA	088 ->22F5
0AA A<C R<-	378 READ 13(c)	2EA ?C80 R<-	0FE C>B MS	179 ?C XQ	000 NOP	3E0 RTN	067 103 S
158 M=C ALL	0E6 C>B S\$X	023 JNC \$+04	0DC R= 10	085 ->215E	080 C=N ALL	278 READ 9(Q)	01C R= 3
0B0 C=N ALL	04E C=0 ALL	171 ?NC XQ	058 G=C PR,+ 3AB JNC \$-0B	270 RAM SLCT	158 M=C ALL	1B1 ?NC XQ	
10A A=C R<-	130 LDI S\$X	084 ->215C	080 C=M ALL	000 NOP	22E C=C+1 ALL	2EE ?C80 ALL	018 ->066C
34D ?NC XQ	0C0 192 P	01B JNC \$+03	098 C=G PR,+ 000 NOP	070 N=C ALL	08B JNC \$+11	02B JNC \$+05	
0A4 ->29D3	158 M=C ALL	155 ?NC XQ	070 N=C ALL	000 NOP	038 READ 0(T)	315 ?NC XQ	0CC ?FSET 10
0AA A<C R<-	070 N=C ALL	084 ->2155	31C R= 1	000 NOP	00E A=0 ALL	098 ->26C5	3C3 JNC \$-08
10A A=C R<-	0B3 JNC \$+10	0C6 C=B S\$X	0B0 C=N ALL	000 NOP	03B JNC \$+07	2EE ?C80 ALL	1A9 ?NC XQ
070 N=C ALL	270 RAM SLCT	106 A=C S\$X	0FC RCR 10	000 NOP	155 ?NC XQ	381 ?NC 60	018 ->066A
2E5 ?NC XQ	038 READ 0(T)	0B0 C=N ALL	26A C=C-1 R<-	000 NOP	084 ->2155	00A ->02E0	0AE A>C ALL
0A4 ->29B9	23E C=C+1 MS	366 ?AC S\$X	36F JC \$-13	000 NOP	198 C=M ALL	24C ?FSET 9	1BC RCR 11
37C RCR 12	093 JNC \$+12	36F JC \$-13	07C RCR 4	000 NOP	270 RAM SLCT	3E0 FJC \$-03	330 FETCH S\$X

## 21 BLOCK

8	9	A	B	C	D	E	F
276 C=C-1 XS	009 ?C GO	0BA A>C M	3EE LSHFA ALL	190 LDRR- 6	309 ?NC XQ	3E0 RTN	3D5 ?NC XQ
276 C=C-1 XS	083 ->2002	230 C=C+1 M	3CB JNC \$-07	31C R= 1	0B8 ->2EC2	0C4 CLRF 10	088 ->22F5
276 C=C-1 XS	266 C=C-1 S\$X	330 FETCH S\$X	0EE C>B ALL	33B JNC \$-19	31D ?NC GO	061 ?NC XQ	06A 106 J
027 JC \$+04	0E6 C>B S\$X	31C R= 1	03C RCR 3	03C RCR 3	002 ->0C7	0A4 ->2918	266 C=C-1 S\$X
3D5 ?NC XQ	046 C=0 S\$X	262 C=C-1 PR	270 RAM SLCT	226 C=C+1 S\$X	3B8 READ 14(d)	0CA C=B R<-	JAO ?NC RTN
088 ->22F5	270 RAM SLCT	102 A=C PR	266 C=C-1 S\$X	106 A=C S\$X	046 C=0 S\$X	3D8 C>ST X	08C ?FSET 5
043 67 C	378 READ 13(c)	37C RCR 12	0EE C>B ALL	046 C=0 S\$X	123 RCR 2	144 CLRF 6	2E7 JC \$-24
27A C=C-1 M	270 RAM SLCT	042 A>C PR	0AE A>C ALL	270 RAM SLCT	358 ST=C X	3D8 C>ST X	046 C=0 S\$X
0FA C>B M	266 C=C-1 S\$X	23C RCR 2	2F0 WRITE DATA	378 READ 13(c)	144 CLRF 6	085 ?NC XQ	3E0 RTN
285 ?NC XQ	1BC RCR 11	00E A=0 ALL	0EE C>B ALL	046 A>C S\$X	284 CLRF 7	0A4 ->2921	000 NOP
014 ->05A1	0FA C>B M	23A C=C+1 M	1BC RCR 11	368 WRIT 13(c)	080 C=N ALL	13C RCR 8	000 NOP
106 A=C S\$X	330 FETCH S\$X	026 C=C-1 S\$X	266 C=C-1 S\$X	01C R= 3	3E0 RTN	10A A=C R<-	000 NOP
0DA C=B M	3D8 C>ST X	10A A=C R<-	03F JC \$+07	002 A=0 PR	162 A=A+1 PR	1ED ?NC GO	000 NOP
11A A=C M	084 CLRF 5	27E C=C-1 MS	0EE C>B ALL	0C4 CLRF 10	359 ?NC GO	01A ->067B	000 NOP
330 FETCH S\$X	3D8 C>ST X	027 JC \$+04	0AE A>C ALL	0BD ?NC XQ	0A6 ->29D6	0CC ?FSET 10	000 NOP
306 ?AC S\$X	2F0 WRITE DATA	3EE LSHFA ALL	2DC R= 13	08C ->232F	16E A=A+1 ALL	3A0 ?NC RTN	000 NOP

## 22 BLOCK

0	1	2	3	4	5	6	7
038 READ 0(T) 038 READ 0(T) 3E0 RTN	266 C=C-1 S\$X 236 C=C+1 XS	17C RCR 6	17C RCR 6	050 ->1419			
168 JNC \$+2D 3E0 RTN	270 RAM SLCT 20A C=C+A	R<- 3D8 C>ST X	3D8 C>ST X	14C ?FSET 6			
038 READ 0(T) 038 READ 0(T) 3E0 RTN	038 READ 0(T) 01B JNC \$+03	30C ?FSET 1	30C ?FSET 1	013 JNC \$+02			
123 JNC \$+24 093 JNC \$+12 07C RCR	0C6 C=B S\$X 226 C=C+1 S\$X	2E9 ?C GO	?C GO	046 C=0 S\$X			
038 READ 0(T) 038 READ 0(T) 3E0 RTN	34B JNC \$+17 01B JNC \$+03	02F ->OBBA	02F ->OBBA	226 C=C+1 S\$X			
103 JNC \$+20 073 JNC \$+0E 23C RCR	042 C=0 BR 262 C=C-1 BR	375 ?MC XD	?MC XD	013 JNC \$+02			
038 READ 0(T) 038 READ 0(T) 3E0 RTN	1EA C=C+C RC- 262 C=C-1 BR	068 ->22DB	068 ->22DB	266 C=C-1 S\$X			
0E3 JNC \$+1C 053 JNC \$+04 086 B=A	1EA C=C+C RC- 10A A=C RC-	379 ?MC XD	?MC XD	3E8 WRIT 15(e)			
038 READ 0(T) 038 READ 0(T) 0EA C>B	1EA C=C+C RC- 270 RAM SLCT	0AO ->28DE	0A4 ->2950	0DD ?MC XD			
0C3 JNC \$+18 033 JNC \$+06 266 C=C-1 S\$X	222 C=C+1 BR 07C RCR	185 ?MC XD	3FB READ 15(e)	08C ->2337			
038 READ 0(T) 038 READ 0(T) 270 RAM SLCT	1E2 C=C+C BR 130 LDI S\$X	014 ->0561	00C ?FSET 3	2FB JNC \$+21			
0A3 JNC \$+14 393 JNC \$+0E 038 READ 0(T)	1E6 C=C+C S\$X 220 M44	00C ?FSET 3	083 JNC \$+10	ZEB PC0 S\$X			
038 READ 0(T) 038 READ 0(T) 0CA C=B	01F JC \$+03 0FC RCR	10 ICD ?C GO	2E6 ?C0 S\$X	01F JC \$+03			
0FC RCR 10 37C RCR 12 3E0 RTN	3C6 RSHFC S\$X 1E0 GOTO ADR	007 ->0173	3BD ?C XD	226 C=C+1 S\$X			
3E0 RTN 3E0 RTN	00A A>C R<- 319 ?MC GO	0A9 ->2AF7	3E8 WRIT 15(e)	3E8 WRIT 15(e)			
000 NOP	13C RCR 8 0E6 B=A S\$X	002 ->00C6	065 ?MC XD	165 ?MC XD			

## 22 BLOCK

B	9	A	B	C	D	E	F
014 ->0559	0CC ?FSET 10	098 ->26C5	04E C=0	ALL	070 N=C	ALL	00C ->0384
24C ?FSET 9	11F JC \$+23	01C R= 3	070 N=C	ALL	019 ?MC XD	24C ?FSET 9	204 CLRF 2
319 ?MC XD	2EE ?C0	ALL	34C ?FSET 12		08C ->2306	2A9 ?C GO	398 C=ST X
038 ->0EC6	044 ->2950	01B JNC \$+03	147 JC \$+28	14C ?FSET 6	047 ->29AA	22D ?MC XD	2BC RCR 7
065 ?MC XD	0A1 ?MC XD	20C ?FSET 2	0CC ?FSET 10	027 JC \$+04	065 ?MC XD	048 ->2A8B	3A8 WRIT 14(d)
050 ->1419	0A4 ->2928	37B JNC \$+11	2C9 ?C GO	080 C=N	ALL	050 ->1419	33B JNC \$+19
226 C=C+1 S\$X	385 ?MC XD	381 ?MC GO	08F ->23B2	266 C=C-1 S\$X	266 ?C0	S\$X	3A1 ?MC XD
3E8 WRIT 15(e)	084 ->21E1	141 ?MC XD	3CB JNC \$+07	023 JNC \$+04	3E0 RTN		088 ->22E8
3E5 ?MC XD	3CD ?MC XD	0AE A>C ALL	044 ->2950	198 C=M	ALL	239 ?MC XD	1B0 POP ADR
05C ->17F9	048 ->2AF3	266 C=C-1 S\$X	3FB READ 15(e)	095 ?MC XD	00C ->038E	3J0 FETCH S\$X	
075 ?MC GO	088 SETF 5	18F JC \$+31	3CD ?MC XD	044 ->2925	3AB ?MC XD	108 SETF 8	1C5 ?MC XD
006 ->011D	04E C=0	ALL	084 CLRF 5	07C RCR	0AO ->28EB	070 ->1C71	2CC ?FSET 13
278 READ 9(0)	266 C=C-1 S\$X	00C ?FSET 3	3E8 WRIT 15(e)	0AA A>C R<-	31D ?MC GO	260 SETHEX	01F JC \$+03
158 M=C ALL	248 SETF 9	173 JNC \$+2E	3E8 WRIT 15(e)	0FC RCR	002 ->00C7	2BC RCR	04C ?FSET 4
2EE ?C0	ALL	10B JNC \$+03	244 CLRF 9	061 ?MC XD	345 ?MC XD	00C ?FSET 2	01B JNC \$+03
087 JC \$+10	315 ?MC XD	01B JNC \$+03	080 C=N	ALL	0A4 ->2918	1BC ->6FD1	379 ?MC XD
		088 SETF 5	144 CLRF 6	07C RCR	211 ?MC XD	3A0 ?MC RTN	

## 23 BLOCK

0	1	2	3	4	5	6	7
0A0 ->28DE	033 JNC \$+06	283 643 C	03F JC \$+07	222 C=C+1 BR	0AA A>C	R<- 1FE C=C+C MS	270 RAM SLCT
29D ?MC XD	04E C=0	ALL	04E C=0	1E2 C=C+C BR	10A A=C	R<- 0E3 JNC \$+1C	205 ?MC XD
00C ->03A7	359 ?MC XD	1E0 GOTO ADR	270 RAM SLCT	013 JNC \$+02	329 ?MC XD	1B0 POP ADR	0BC ->2F81
22D ?MC XD	044 ->29D6	0AE A>C	ALL	3FB READ 15(e)	222 C=C+1 BR	0A4 ->29CA	3E0 RTN
0A8 ->2A8B	08D ?MC XD	31C R= 1	046 C=0 S\$X	1E2 C=C+C BR	0AA A>C	R<- 198 C=M	295 ?MC XD
37B JNC \$+11	08C ->2323	08A B=A	R<- 266 C=C-1 S\$X	013 JNC \$+02	158 C=M	ALL	0BC ->2FA5
0AA A>C	R<- 198 C=M	ALL	270 RAM SLCT	3E8 WRIT 15(e)	00E C>B	ALL	0CE C=B ALL
10A A=C	R<- 36A ?A8C	RC- 10E A=C	ALL	046 C=0 S\$X	222 C=C+1 BR	139 ?MC XD	158 M=C ALL
158 M=C	ALL	3CF JC \$+07	07C RCR	328 WRIT 12(b)	088 ->224E	0A4 ->29D3	01C R= 3
048 SETF 4	3E0 RTN	130 LDI S\$X	338 READ 12(b)	3E0 RTN	23E C=C+1 MS	2E5 ?MC XD	10A A=C R<-
208 SETF 7	0AA A>C	R<- 280 640 E	0AA A>C R<- 04C ?FSET 4	04C ?FSET 4	05F JC \$+0B	0A4 ->29B9	359 ?MC XD
3F5 ?MC XD	08A B=A	R<- 3B3 JNC \$+0A	10A A=C R<- 082 ->20F2	3C9 ?MC GO	31C R= 1	0A4 ->29D6	139 ?MC XD
0A8 ->2AFD	270 RAM SLCT	31D ?MC XD	0CC ?FSET 10	3E8 WRIT 15(e)	08C ?FSET 5	26A C=C-1 R<-	04F JC \$+09
198 C=M	ALL	10A A=C	R<- 0A4 ->29C7	057 JC \$+0A	033 JNC \$+06	04F JC \$+09	088 ->224E
0AA A>C	R<- 07C RCR	4	04B JNC \$+09	044 ->29D6	27E C=C-1 MS	106 A=C S\$X	0FC RCR 10
158 M=C	ALL	130 LDI S\$X	2CC ?FSET 13	013 JNC \$+02	09D ?MC XD	3E6 LSHFA S\$X	0EE C>B ALL

## 23 BLOCK

B	9	A	B	C	D	E	F
07C RCR 4	013 JNC \$+02	266 C=C-1 S\$X	198 C=M	ALL	14C ?FSET 6	1B0 POP ADR	08C ->23C9
11D ?MC XD	226 C=C+1 S\$X	262 C=C-1 BR	3E0 RTN	037 JC \$+06	02B JNC \$+05	0A3 JNC \$+14	27A C=C-1 M
088 ->2247	06A A>B	RC- 262 C=C-1 BR	3B9 ?MC XD	248 SETF 9	1B0 POP ADR	1B0 POP ADR	325 ?MC XD
0EE C>B	ALL	069 ?MC XD	1E6 C=C+C S\$X	084 ->21EE	065 ?MC XD	02B JNC \$+05	08C ->23C9
07C RCR 4	08C ->231A	1E6 C=C+C S\$X	34C ?FSET 12	050 ->1419	23A C=C+1 M	1B0 POP ADR	23A C=C+1 M
0EE C>B	ALL	198 C=M	ALL	211 ?C GO	170 PUSH ADR	23A C=C+1 M	23A C=C+1 M
06A A>B	RC- 10A A=C	R<- 1E6 C=C+C S\$X	087 ->2184	226 C=C+1 S\$X	27A C=C-1 M	23A C=C+1 M	23A C=C+1 M
346 ?A80 S\$X	284 CLRF 7	013 JNC \$+02	0AE A>C ALL	3E8 WRIT 15(e)	325 ?MC XD	170 PUSH ADR	37C RCR 12
017 JC \$+02	3F5 ?MC GO	222 C=C+1 BR	141 ?MC XD	0BD ?MC GO	08C ->23C9	27A C=C-1 M	1EE C=C+C ALL
046 C=0 S\$X	0AA ->2AFD	3CA RSHFC R<- 0A4 ->2950	08E ->2337	0F3 JNC \$+1E	325 ?MC XD	1EE C=C+C ALL	
236 C=C+1 XS	158 M=C	ALL	310 LD0R-C	330 FETCH S\$X	1B0 PDP ADR	08C ->23C9	1EE GOTO ADR
236 C=C+1 XS	34A ?A80	R<- 01C R= 3	244 CLRF 9	1B0 PDP ADR	053 JNC \$+0A	1B0 PDP ADR	1E0 GOTO ADR
206 C=C+A S\$X	017 JC \$+02	10A A=C R<- 02B JNC \$+05	2E6 ?C0 S\$X	3DA RSHFC M	02B JNC \$+05	02B JNC \$+05	1B0 PDP ADR
027 JC \$+04	04A C=0	R<- 198 C=M	ALL	033 JNC \$+06	1B0 PUSH ADR	1B0 PUSH ADR	170 PUSH ADR
276 C=C-1 XS	24A C=A-C	R<- 06D ?MC XD	JE5 ?MC XD	1EE C=C+C ALL	23A C=C+1 M	23A C=C+1 M	23C RCR 2
276 C=C-1 XS	023 JNC \$+04	08C ->231B	0AB ->2AF9	3E0 RTN	325 ?MC XD	170 PUSH ADR	1E0 GOTO ADR

## 24 BLOCK

0	1	2	3	4	5	6	7								
066 A>B S\$X 222 C=C+1 BR 04E C=0 ALL 03C RCR 3 0AA ->29D3 2F6 ?C\$0 XS 0AA ->29CA 236 C=C+1 XS	18C RCR 11 222 C=C+1 BR 24C ?FSET 9 01C R= 3 2E5 ?NC X0 383 JNC \$-10 38C ?FSET 0 0C7 JC \$+18	23A C=C+1 M 222 C=C+1 BR 248 SETF 9 144 CLRF 6 37C RCR 12 276 C=C-1 XS 0AE C=0 ALL 236 C=C+1 XS	330 FETCH S\$X 37B JNC \$-11 08E B=A ALL 244 CLRF 9 282 C=0-C BR 23C RCR 2 0AE AC>C ALL	276 C=C-1 XS 39C R= 0 329 ?C X0 38C ?FSET 0 0C7 JC \$-08	276 C=C-1 XS 045 ->29CA 38C ?FSET 0 0C7 JC \$-08	276 C=C-1 XS 04E C=0 ALL 270 RAM SLCT 04E AC>C ALL 236 C=C+1 XS	276 C=C-1 XS 04A AC>C R= 270 RAM SLCT 04E AC>C ALL 236 C=C+1 XS								
2F6 ?C\$0 XS 222 C=C+1 BR 018 ->066A 141 ?NC X0 3DF JC \$-05 18C RCR 11 0AA AC>C ALL 236 C=C+1 XS	3E7 JC \$-04 09F JC \$+13 06E A>B ALL 044 ->2950 1E2 C=C+C BR 39C R= 0 329 ?C X0 38C ?FSET 0 0C7 JC \$+18	2E2 ?C\$0 BR 222 C=C+1 BR 18C RCR 11 0CC ?FSET 10 1E2 C=C+C BR 39C R= 0 329 ?C X0 38C ?FSET 0 0C7 JC \$+18	03F JC \$+07 34F JC \$-17 2CB JNC \$-27 23F JC \$-39 1E2 C=C+C BR 39C R= 0 329 ?C X0 38C ?FSET 0 0C7 JC \$+18	2EA JNC R-< 234 C=C+1 M 23A C=C+1 M 0C6 C=B S\$X 3AF JC \$-08 1E2 C=C+C BR 39C R= 0 329 ?C X0 38C ?FSET 0 0C7 JC \$+18	3C3 JNC \$-08 23A C=C+1 M 330 FETCH S\$X 1BC RCR 11 023 JNC \$+04 1E2 C=C+C BR 39C R= 0 329 ?C X0 38C ?FSET 0 0C7 JC \$+18	266 C=C-1 S\$X 330 FETCH S\$X 366 ?AC S\$X 058 B=C BR,+ 023 JNC \$+04 1DD ?NC X0 03C RCR 3 23B JNC \$-29 1ED ?NC X0 018 ->067B	36A ?A>C R-< 31C R= 1 24F JC \$-2B 14C ?FSET 6 04C ->2877 03C RCR 3 24B SETF 9 248 SETF 9 018 ->067B	3AF JC \$-0B 222 C=C+1 BR 01B JNC \$+03 0AC ->2877 10E A=C ALL 24B SETF 9 223 JNC \$-3C 01C ?C\$0 BR 14C ?FSET 6	103 JNC \$+20 327 JC \$-1C 27A C=C-1 M 34D ?NC X0 393 JNC \$-0E 329 ?NC X0 3E7 JC \$-04 03B JNC \$+07 14C ?FSET 6						
24 BLOCK															
8	9	A	B	C	D	E	F								
141 ?NC X0 2CC ?FSET 13 033 JNC \$+06 093 JNC \$+12 1E0 GOTO ADR 008 ->02E3 386 RSHFA S\$X 04C ?FSET 4	0A4 ->2950 08F JC \$+17 06A A>C R-< 24C ?FSET 9 0C8 SETF 10 106 A=C S\$X 386 RSHFA S\$X 083 JNC \$+10	34D ?NC X0 04C ?FSET 4 37C RCR 12 07B JNC \$+0F 01C R= 3 130 LDI S\$X 1A6 A=A-1 S\$X 28B READ 10(+)	04A ->29D3 04F JC \$+15 38E RSHFA ALL 08C ?FSET 5 10A A=C R-< 064 100 d 144 CLRF 6 10A A=C R-<	0DD ?NC X0 24C ?FSET 9 38E RSHFA ALL 1A7 JC \$+34 31D ?NC X0 306 ?A>C S\$X 0B1 ?NC X0 338 READ 12(b)	08C ->2337 09B JNC \$+13 3D3 JNC \$-06 158 H=C ALL 0AA ->29C7 09B JNC \$+13 090 ->2434 0AA A>C R-<	04E C=0 ALL 0CB JNC \$+19 23C RCR 2 288 READ 10(+) 0A3 JNC \$+14 38D ?NC X0 2EE ?C\$0 ALL 0FC RCR 10	270 RAM SLCT 35C R= 12 158 H=C ALL 266 WRIT 9(0) 183 JNC \$+30 09C ->27DF 01C R= 3 360 ?C RTN 10E A=C ALL	04A ->29C7 04F JC \$+19 23C RCR 2 288 READ 10(+) 0A3 JNC \$+14 38D ?NC X0 2EE ?C\$0 ALL 0FC RCR 10	025 ?NC X0 2EE ?C\$0 ALL 315 ?NC X0 388 READ 14(d) 284 CLRF 7 10A A=C R-< 004 ->02E0 0FC RCR 10	0A4 ->29B9 12B JNC \$+25 098 ->26C5 358 ST=C X 011 ?NC X0 2B8 READ 10(+) 046 C=0 S\$X 0AA AC>C R-<	388 SETF 0 10E A=C ALL 2EE ?C\$0 ALL 198 C=M ALL 000 ->0004 2E6 ?C\$0 S\$X 270 RAM SLCT 2EB WRIT 11(a) 04E C=0 ALL 09B JNC \$+13 1BC RCR 11 27E C=C-1 MS 1B3 JNC \$+36 2CC ?FSET 13 0AE AC>C ALL	24B JNC \$-37 04E C=0 ALL 09B JNC \$+13 1BC RCR 11 27E C=C-1 MS 1B3 JNC \$+36 2CC ?FSET 13 0AE AC>C ALL	37D ?NC X0 270 RAM SLCT 20C ?FSET 2 330 FETCH S\$X 2FE ?C\$0 MS 08A B=A R-< 02F JC \$+05 009 ?NC X0	09C ->27DF 31C R= 1 01F JC \$+03 266 ?C\$0 S\$X 24B JNC \$-37 063 JNC \$+0C 3B8 READ 14(d) 030 ->0C02 0AB JNC \$+15	198 C=M ALL 34A ?A>C R-< 0C4 CLRF 10 14B JNC \$+29 38D ?NC X0 06A A>B R-< 358 ST=C X 0AB JNC \$+15

## 25 BLOCK

0	1	2	3	4	5	6	7									
0EA C>B R-< 387 JC \$-10 23A C=C+1 M 0EE C>B ALL 149 ?NC X0 0EA C>B R-< 3C6 RSHFC S\$X 3D8 C>>ST X	001 ?NC X0 10A A=C R-< 330 FETCH S\$X 141 ?NC X0 0A4 ->2952 3AD ?NC X0 236 C=C+1 XS 106 A=C S\$X	030 ->0C00 0BD ?NC X0 2FC RCR 13 0A4 ->2950 2E5 ?NC X0 03C ->0FEB 373 JNC \$-12 148 SETF 6	01E ->07C2 3C1 ?NC X0 047 JC \$+08 0A4 ->29CF 044 ->29B9 1D8 C>H ALL 1A2 A=A-1 BR	309 ?NC X0 08C ->232F 1E6 C=C+C S\$X 33D ?NC X0 044 ->29CF 0D6 C=B XS 06A A>B R-<	01E ->07C2 3C1 ?NC X0 047 JC \$+08 0A4 ->29CF 044 ->29B9 1E6 ?C\$0 S\$X 28C ?FSET 7 3B3 JNC \$-0A 10A A=C R-<	304 CLRF 1 002 ->0FO 0OC ?FSET 10 0AA A>C R-< 0AA A>C R-< 042 C=0 BR 146 A=ATC S\$X 262 C=C-1 BR	02C ?FSET 13 0CC ?FSET 10 0AA A>C R-< 0AA A>C R-< 042 C=0 BR 142 A=ATC BR 262 C=C-1 BR	07F JC \$+0F 133 JNC \$+26 1CA A=A-C R-< 0AA A>C R-< 1EA C=C+C R-< 053 JNC \$+0A 027 JC \$+04	04C ?FSET 4 10A A=C R-< 30C ?FSET 1 10A A=C R-< 0AA A>C R-< 1EA C=C+C R-< 053 JNC \$+0A 027 JC \$+04	06F JC \$+0D 002 A=0 BR 34B JNC \$-17 355 ?NC X0 1EA C=C+C R-< 166 A=A+1 S\$X 0AA ->29C3 032 ?A>C BR	106 A=C S\$X 338 READ 12(b) 08A B=A R-< 09C ->27D5 1EA C=C+C R-< 166 A=A+1 S\$X 0AA ->29C3 032 ?A>C BR	198 C=M ALL 1BC RCR 11 23B JNC \$-39 0EE C>B ALL 222 C=C+1 BR 198 C=M ALL 383 JNC \$-10 01B JNC \$+03	24C ?FSET 9 23A C=C+1 M 338 READ 12(b) 253 JNC \$-36 1E2 C=C+C BR 358 ST=C X 108 SETF 8 306 ?A>C S\$X	38D ?NC X0 330 FETCH S\$X 14A A=ATC R-< 10C ?FSET 8 1E6 C=C+C S\$X 046 C=0 S\$X 3AD ?NC X0 01B JNC \$+03	090 ->24E3 046 A>C S\$X 3D3 JNC \$-06 03B JNC \$+07 097 JC \$+12 270 RAM SLCT 03C ->0FEB 104 CLRF 8	30C ?FSET 1 086 A>C XS 308 SETF 1 0EA C>B R-< 3C6 RSHFC S\$X 24B JNC \$-37 284 CLRF 7 0AA A>C R-<
25 BLOCK																
8	9	A	B	C	D	E	F									
246 C=A-C S\$X 2E0 ?NC X0 0A4 ->29B9 3A0 ?NC RTN 14A A=ATC R-< 386 RSHFA S\$X 3S3 JNC \$-16 01B JNC \$+03	242 C=A-C BR 0A4 ->29BB 3D8 C>ST X 08A B=A R-< 04B JNC \$+09 386 RSHFA S\$X 1A2 A=A-1 BR 306 ?A>C S\$X	023 JNC \$+04 37C RCR 12 284 CLRF 7 016 A=0 XS 106 A=C S\$X 338 READ 12(b) 1A2 A=A-1 BR 01B JNC \$+03	266 C=C-1 S\$X 0C6 C=B S\$X 10C ?FSET 8 0CC ?FSET 10 338 READ 12(b) 1E2 C=C+C BR 338 JNC \$-19 108 SETF 8	262 C=C-1 BR 23C RCR 2 013 JNC \$+02 0C3 JNC \$+18 0AA A>C R-< 0AA A>C R-< 104 CLRF 8	262 C=C-1 BR 0FA C>B M 288 SETF 7 346 ?A\$0 S\$X 1CA A=A-C R-< 1E2 C=C+C BR 37D ?NC X0 30D ?NC X0	1E6 C=C+C S\$X 0FE C>B MS 3D8 C>ST X 08B JNC \$+11 023 JNC \$+04 027 JC \$+04 090 ->24DF 044 ->29C3	1E6 C=C+C S\$X 08D ?NC X0 002 A=0 BR 37D ?NC X0 158 H=C ALL 356 ?A\$0 XS 044 ->29C3 044 ->29C3	1E6 C=C+C S\$X 08C ->2323 09C ->2323 046 A>C S\$X 090 ->24DF 044 ->29C3 141 ?NC X0 097 JC \$+12	1E6 C=C+C S\$X 359 ?NC X0 198 C=M ALL 358 ST=C X 10A A=C R-< 388 JNC \$-0F 044 ->2950 3E6 LSHFA S\$X	013 JNC \$+02 0A4 ->29D6 10A A=C R-< 28C ?FSET 7 049 ?NC GO 146 A=ATC S\$X 070 N-C ALL 356 ?A\$0 XS	222 C=C+1 BR 0CE C=B ALL 175 ?NC GO 03B JNC \$+07 096 ->2512 222 C=C+1 BR 198 C=M ALL 356 ?A\$0 XS 07F JC \$+0F	3CA RSHFC R-< 37C RCR 12 096 ->255D 284 CLRF 7 346 ?A\$0 S\$X 222 C=C+1 BR 198 C=M ALL 356 ?A\$0 XS 3E6 LSHFA S\$X	0E6 C>B S\$X 08D ?NC X0 008 ->286 106 A=C S\$X 3EA LSHFA R-< 142 A=ATC BR 027 JC \$+04 080 C=N ALL	141 ?NC X0 08C ->2323 008 ->286 106 A=C S\$X 3EA LSHFA R-< 166 A=A+1 S\$X 033 JNC \$+06 0AA A>C R-<	0A4 ->2950 2E3 ?NC X0 356 ?A\$0 XS 338 READ 12(b) 3EA LSHFA R-< 166 A=A+1 S\$X 033 JNC \$+06 0AA A>C R-<	

## 26 BLOCK

0	1	2	3	4	5	6	7	
10C ?FSET 8 013 JNC \$+02 222 C=C+1 R- 1EA C=C+C R- 1EA C=C+C R- 1EA C=C+C R- 1E6 C=C+C S\$X	11E A=C MS 198 C=M ALL 0EE C>B ALL 06A A>B R- 221 ?NC XQ 080 ->2C88 000 NOP	023 JNC \$+04 18E A=A-1 MS 02F JC \$+05 37B JNC \$-11 23C RCR 2 2EA ?C\$0 R- 3F3 JNC \$-02	058 6=C ER,+ 23A C=C+1 M 330 FETCH S\$X 2E6 ?C\$0 S\$X 057 JC \$+0A 15C R= 6	330 FETCH S\$X 197 JC \$+32 0E6 C>B S\$X 23A C=C+1 M 330 FETCH S\$X 06 C=C+C XS	046 A>C 0CA C=B 080 ?FSET 5 050 LDR-1 000 LDR-3 01F JC \$+03 222 C=C+1 M 343 JNC \$-0C 363 JNC \$-14 0E6 C>B S\$X 10E A=C ALL 086 SETF 5 02F RCR 5	046 A>C 0CA C=B 080 ?FSET 5 050 LDR-1 000 LDR-3 01F JC \$+03 222 C=C+1 M 343 JNC \$-0C 363 JNC \$-14 0E6 C>B S\$X 10E A=C ALL 086 SETF 5 02F RCR 5	278 READ 9(Q) 340 ?A\$0 R- 27E C=C-1 M 23A C=C+1 M 23A C=C+1 M 330 FETCH S\$X 36A ?A\$C R- 106 A=C S\$X 346 ?A\$0 S\$X 27E C=C-1 M 01F JC \$+03 38E RSHFA ALL 38E RSHFA ALL 3E0 RTN	1E3 JNC \$+JC 340 ?A\$0 R- 397 JC 8-0E 0BC RCR 5 263 JNC 8-34 3 R- S\$X
23C RCR 2 08D ?NC XQ 08C ->2323 198 C=M ALL 325 ?NC GO 096 ->2597 21C R= 2 190 LDR- 6 03C RCR 3	2F6 ?C\$0 XS 01B JNC \$+03 110 LDR- 4 150 LDR- 5 270 RAM SLCT 150 LDR- F 0EA C>B R- 0EA C>B R- 2EA ?C\$0 R- 39C R= 0	158 M=C ALL 084 CLRF 5 15C R= 6 04E C=0 ALL 050 LDR-1 000 LDR-3 01F JC \$+03 300 LDR- F 088 SETF 5 31C R= 1	0DA C=B M 222 C=C+1 M 343 JNC \$-0C 363 JNC \$-14 0E6 C>B S\$X 10E A=C ALL 086 SETF 5 0BC RCR 5 02F RCR 9 11E A=C MS	266 ?B\$0 S\$X 01F JC \$+03 2E6 ?C\$0 S\$X 10E A=C ALL 086 SETF 5 02F RCR 9 110 LDR- 4 08A B=A R- 10C C=B R- 0FC RCR 10 0CA C=B R- 038 READ 0(T) 23C RCR 2 34D ?NC XQ 044 ->29D3 359 ?NC XQ 02F RCR 4 058 G=C ER,+ 07C RCR 4	266 ?B\$0 S\$X 01F JC \$+03 2E6 ?C\$0 S\$X 10E A=C ALL 086 SETF 5 02F RCR 9 110 LDR- 4 08A B=A R- 10C C=B R- 0FC RCR 10 0CA C=B R- 038 READ 0(T) 23C RCR 2 34D ?NC XQ 044 ->29D3 359 ?NC XQ 02F RCR 4 058 G=C ER,+ 07C RCR 4	2FE ?C\$0 MS 02F JC \$+05 340 ?A\$0 R- 306 ?A\$C S\$X 306 ?A\$C S\$X 047 JC \$+08 1C6 A=A-C S\$X	130 LDI 91 346 ?A\$0 R- 01F JC \$+03 38E RSHFA ALL 38E RSHFA ALL 3E0 RTN	130 LDI S\$X 346 ?A\$0 R- 01F JC \$+03 38E RSHFA ALL 38E RSHFA ALL 3E0 RTN

## 26 BLOCK

8	9	A	B	C	D	E	F
03C RCR 3 002 A=0 ER 20A C=C+A R- 1BC RCR 11 105 ?NC GO 09A ->2641 0A6 A>C S\$X 2FC RCR 13 3CA RSHFC R- 222 C=C+1 R- 31C R= 1 070 N=C ALL 1BC RCR 11 10E A=C ALL 198 C=M ALL 0AE A>C ALL	27A C=C-1 M 330 FETCH S\$X 2EA ?C\$0 R- 083 JNC \$+10 104 CLRF 8 3D8 C>ST X 28C ?FSET 7 01B JNC \$+03 284 CLRF 7 108 SETF 8 3D8 C>ST X 3CF JC \$-07 248 SETF 9 03F JC \$+07 080 C=N ALL 29C R= 7 38E RSHFA ALL 38E RSHFA ALL 10C ?FSET 8	04F JC \$+09 34A ?A\$0 R- 377 JC \$-12 07C RCR 4 08C ?FSET 5 017 JC \$+02 1FA C=C+C M 33C RCR 1 1FA C=C+C M 101 ?NC GO 09A ->2640 34A ?A\$0 R- 248 SETF 9 09C R= 5 028 READ 0(T) 080 C=G ER,+ 23C RCR 2 34D ?NC XQ 044 ->29D3 359 ?NC XQ 02F RCR 4 058 G=C ER,+ 07C RCR 4	09F JC \$+13 10E A=C ALL 23C RCR 2 27A C=C-1 M 27A C=C-1 M 3E0 RTN 1FA C=C+C M 01C R= 3 1FA C=C+C M 110 LDR- 4 3DA RSHFC M 1FA C=C+C M 10A A=C R- 1FA C=C+C M 270 RAM SLCT 0CA C=B R- 038 READ 0(T) 10E A=C ALL 34E RSHFA ALL 34E RSHFA ALL 09A ->260D	290 LDR- A 01C R= 3 208 SETF 2 3E0 RTN 378 READ 13(c) 01C R= 3 058 G=C ER,+ 108 SETF 3 1FA C=C+C M 10A A=C R- 1FA C=C+C M 270 RAM SLCT 0CA C=B R- 038 READ 0(T) 10E A=C ALL 34E RSHFA ALL 34E RSHFA ALL 09A ->260D	0D5 ?NC XQ 088 ->2235 23E C=C+1 M 3D3 JNC \$-06 27C RCR 9 262 C=C-1 R- 058 G=C ER,+ 044 ->29B9 08A B=A R- 0CA C=B R- 0FC RCR 10 03A ?A\$C R- 057 JC \$+0A 38E RSHFA ALL 38E RSHFA ALL 044 ->29D6	198 C=M ALL 0EE C>B ALL 06E A>B ALL 387 JC \$-10 01C R= 3 2E5 ?NC XQ 044 ->29B9 06E A>B ALL 31C R= 1 2A3 JNC \$-2C 34A ?A\$0 R- 057 JC \$+0A 34E RSHFA ALL 34E RSHFA ALL 046 C=0 S\$X	2E2 ?C\$0 ER 04B JNC \$+09 34A ?A\$0 R- 387 JC \$-10 01C R= 3 OCE C=B ALL 07C RCR 4 10A A=C R- 0BC RCR 5 2A3 JNC \$-2C 34A ?A\$0 R- 057 JC \$+0A 34E RSHFA ALL 34E RSHFA ALL 046 C=0 S\$X

## 27 BLOCK

0	1	2	3	4	5	6	7
204 CLRF 2 244 CLRF 9 3E0 RTN 047 JC \$+08 244 CLRF 9 0C4 CLRF 10 01C R= 3 1EA C=C+C R- 20C ?FSET 13 1EA C=C+C R- 01F JC \$+03 1EA C=C+C R- 04C ?FSET 4 1E6 C=C+C S\$X 13B JNC \$+27 06F JC \$+0D 2FB READ 11(a) 3C6 RSHFC S\$X 10E A=C ALL 328 WRIT 12(b) 338 READ 12(b) 0AE A>C ALL 0AA A>C R- 07C RCR 4 04A C=0 R- 0EB JNC \$+1D 3F8 READ 15(e)	0C8 SETF 10 2E2 ?C\$0 ER 3E8 WRIT 15(e) 089 ?NC GO 004 ->0222 095 ?NC XQ 044 ->2925 236 C=C+1 XS 236 C=C+1 XS 39B JNC \$-0D 104 A=C R- 1ED ?NC XQ 003 ->0026 270 RAM SLCT 018 ->067B 248 SETF 9 01F JC \$+03 035 ?NC GO 04C ?FSET 4 08E ->2F0D 3A3 JNC \$-0C 01B JNC \$+03 3F8 READ 15(e)	046 C=0 S\$X 266 C=C-1 S\$X 3E8 WRIT 15(e) 0CC ?FSET 10 057 JC \$+0A 095 ?NC XQ 044 ->2925 236 C=C+1 XS 236 C=C+1 XS 104 A=C R- 1ED ?NC XQ 003 ->0026 270 RAM SLCT 018 ->067B 248 SETF 9 01F JC \$+03 035 ?NC GO 04C ?FSET 4 08E ->2F0D 3A3 JNC \$-0C 01B JNC \$+03 3F8 READ 15(e)	236 C=C+1 XS 04F JC \$+15 333 JNC \$-1A 158 M=C ALL 236 C=C+1 XS 236 C=C+1 XS 104 A=C R- 099 ?C GO 003 ->0026 270 RAM SLCT 018 ->067B 248 SETF 9 01F JC \$+03 035 ?NC GO 04C ?FSET 4 08E ->2F0D 3A3 JNC \$-0C 01B JNC \$+03 3F8 READ 15(e)	044 ->29CF 01D ?NC XQ 084 ->2D07 23C RCR 2 38B READ 14(d) 23C C=C+1 M 149 ?NC GO 26B ->0952 36B JNC \$-13 276 C=C-1 XS 10E A=C ALL 3C3 JNC \$-08 046 C=0 S\$X 021 ?NC GO 288 READ 10(t) 270 RAM SLCT 006 ->0108 106 A=C S\$X 278 READ 9(Q) 158 M=C ALL 0BC ->2F7F 2EE ?C\$0 ALL 2EE ?C\$0 ALL 03B JNC \$+07 2B8 READ 10(t)	360 ?C RTN 3D9 ?NC XQ 01C ->07F6 315 ?NC XQ 098 ->26C5 3A1 ?NC GO 092 ->24E8 268 WRIT 9(Q) 021 ?NC GO 288 READ 10(t) 1FD ?NC XQ 278 READ 9(Q) 158 M=C ALL 0BC ->2F7F 2EE ?C\$0 ALL 2EE ?C\$0 ALL 03B JNC \$+07 331 ?NC GO 09E ->27CC 2B8 READ 10(t)	0AA A>C R- 2AB WRIT 10(+) 315 ?NC XQ 01C ->07F6 315 ?NC XQ 098 ->26C5 3A1 ?NC GO 092 ->24E8 268 WRIT 9(Q) 021 ?NC GO 288 READ 10(t) 106 A=C S\$X 278 READ 9(Q) 158 M=C ALL 0BC ->2F7F 2EE ?C\$0 ALL 2EE ?C\$0 ALL 03B JNC \$+07 331 ?NC GO 09E ->27CC 2B8 READ 10(t)	

## 27 BLOCK

8	9	A	B	C	D	E	F
308 SETF 1 201 ?NC XQ 0AC ->2B80 01B JNC \$+03 295 ?NC XQ 0BC ->2F5 288 READ 10(+) 106 A=C S\$X 3EE LSHFA ALL 3EE LSHFA ALL 278 READ 9(Q) 07C RCR 4 0EE C>B ALL 20C ?FSET 2 0FF JC \$+1F 278 READ 9(Q)	0AE A>C ALL 0EE C>B ALL 08D ?NC XQ 08C ->2323 31C R= 1 198 C=M ALL 27E C=C-1 MS 0EE C>B ALL 046 C=0 S\$X 040 ->28C7 306 ?A\$C S\$X 042 A>C R- 285 ?NC GO 03F JC \$+07 270 RAM SLCT 08E B=A ALL 046 A>C R- 201 ?NC XQ 06E A>R ALL 04C ->2B80 050 ->14A1 00C ?FSET 3	158 M=C ALL 0EE C>B ALL 08D ?NC XQ 08C ->2323 31C R= 1 198 C=M ALL 27E C=C-1 MS 0EE C>B ALL 046 C=0 S\$X 040 ->28C7 306 ?A\$C S\$X 042 A>C R- 285 ?NC GO 03F JC \$+07 270 RAM SLCT 08E B=A ALL 046 A>C R- 201 ?NC XQ 06E A>R ALL 04C ->2B80 050 ->14A1 00C ?FSET 3	360 ?C RTN 04E C=0 ALL 08E C>B R- 0FC RCR 10 06A A>C R- 038 READ 0(T) 0EE C>B ALL 046 C=0 S\$X 040 ->28C7 306 ?A\$C S\$X 042 A>C R- 285 ?NC GO 03F JC \$+07 270 RAM SLCT 08E B=A ALL 046 A>C R- 201 ?NC XQ 06E A>R ALL 04C ->2B80 050 ->14A1 00C ?FSET 3	009 ?NC GO 082 ->2002 158 M=C ALL 141 ?NC XQ 044 ->2950 130 LDI S\$X 00B 11 K 3C3 JNC \$-08 10C R= 6 130 LDI S\$X 204 CLRF 2 106 A=C S\$X 02F JC \$+05 106 A=C S\$X 204 CLRF 2 106 A=C S\$X 006 A>C R- 308 READ 14(d) 308 READ 14(d) 308 READ 14(d) 308 READ 14(d) 308 READ 14(d)	39F JC \$-0D 006 A=0 S\$X 01C R= 3 15C R= 6 222 C=C+1 R- 01B JNC \$+03 00B 11 K 3C3 JNC \$-08 10C R= 6 130 LDI S\$X 204 CLRF 2 106 A=C S\$X 02F JC \$+05 106 A=C S\$X 204 CLRF 2 106 A=C S\$X 006 A>C R- 308 READ 14(d) 308 READ 14(d) 308 READ 14(d) 308 READ 14(d) 308 READ 14(d)	110 LDR- 4 266 C=0-C S\$X 1BC RCR 11 15C R= 6 222 C=C+1 R- 01B JNC \$+03 00B 11 K 3C3 JNC \$-08 10C R= 6 130 LDI S\$X 204 CLRF 2 106 A=C S\$X 02F JC \$+05 106 A=C S\$X 204 CLRF 2 106 A=C S\$X 006 A>C R- 308 READ 14(d) 308 READ 14(d) 308 READ 14(d) 308 READ 14(d) 308 READ 14(d)	

## 28 BLOCK

0	1	2	3	4	5	6	7
038 READ 0(T) 0B3 JNC \$+18	033 JNC \$+06	038 READ 0(T)	038 READ 0(T)	038 READ 0(T)	0E8 JNC \$+1D	13C RCR 8	198 C=M ALL
123 JNC \$+24	0FC RCR 10	23C RCR 2	103 JNC \$+20	15B JNC \$+2B	0E8 C=OB 12	23C RCR 8	23E C-C+1 MS
038 READ 0(T) 0CA C=B	R<- 0CA C=B	R<- 0CA C=B	038 READ 0(T)	038 READ 0(T)	0E8 C=OB 12	0EA C=OB 6	0AE A>C ALL
0F3 JNC \$+1E	07C RCR 4	37C RCR 12	393 JNC \$-0E	333 JNC \$-1A	0E8 C=OB 12	17C RCR 6	046 C=0 S&X
038 READ 0(T) 093 JNC \$+12	013 JNC \$+02	038 READ 0(T)	038 READ 0(T)	038 READ 0(T)	0E8 C=OB 12	17C RCR 6	270 RAM SLCT
0C3 JNC \$+18	13C RCR 8	0CA C=B	363 JNC \$-14	11B JNC \$+23	0E8 C=OB 12	0EA C=OB 6	3E0 RTN
038 READ 0(T) 0CA C=B	R<- 2FO WRITE DATA	038 READ 0(T)	038 READ 0(T)	2FO WRITE DATA	0E8 C=OB 12	13C RCR 8	311 ?NC XQ
093 JNC \$+12	17C RCR 6	01C R= 3	333 JNC \$-1A	0EB JNC \$+1D	0E8 C=OB 12	03J JNC \$+06	0A0 ->28C4
038 READ 0(T) 073 JNC \$+0E	3E0 RTN 2	038 READ 0(T)	038 READ 0(T)	038 READ 0(T)	0E8 C=OB 12	07C RCR 4	2EE PC\$0 ALL
063 JNC \$+0C	17C RCR 6	303 JNC \$-20	0BB JNC \$+17	270 RAM	0E8 C=OB 12	0EA C=OB 6	1D3 JNC \$+3A
038 READ 0(T) 0CA C=B	R<- 0EA C=OB	038 READ 0(T)	038 READ 0(T)	31C R= 1	0E8 C=OB 12	0FC RCR 10	0A5 ?NC XQ
033 JNC \$+06	13C RCR 8	37C RCR 12	2D3 JNC \$-26	06B JNC \$+11	0E8 C=OB 12	013 JNC \$+02	0A4 ->2929
038 READ 0(T) 053 JNC \$+0A	123 JNC \$+24	038 READ 0(T)	038 READ 0(T)	31B JNC \$-1D	0E8 C=OB 12	0EA C=OB 10	0A1 ?NC XQ
37C RCR 12	7C RCR 4	3D5 ?NC XQ	2A3 JNC \$-2C	37C RCR 12	0E8 C=OB 12	2CA TB\$0 4	0A4 ->2918
0CA C=B R<- 0CA C=B	R<- 088 ->22F5	273 JNC \$-32	0EA C=OB	07C RCR 4	0E8 C=OB 12	047 JC \$+08	07C RCR 4
23C RCR 2	0FC RCR 10	000 NOP	23C RCR 2	073 JNC \$+0E	2FO WRITE DATA	11D ?NC XQ	

## 28 BLOCK

8	9	A	B	C	D	E	F
088 ->2247	04E C=0 ALL	366 ?A8C S&X	198 C=M ALL	013 JNC \$+02	306 ?A8C S&X	266 C=C-1 S&X	01B JNC \$+03
2E6 PC\$0 S&X	270 RAM SLCT	3A7 JC \$-0C	349 ?NC GO	2C8 SETF 13	3A0 ?NC RTN	39F JC \$-0D	329 ?NC XQ
013 JNC \$+02	378 READ 13(c)	0E6 C=OB SSX	0A6 ->29EA	009 ?NC GO	04E C=0 ALL	2E6 PC\$0 S&X	0A4 ->29CA
22E C=C+1 ALL	26E C=C-1 ALL	0AE A>C ALL	198 C=M ALL	082 ->2002	3E0 RTN	38B JNC \$-0F	2D ?NC XQ
069 ?NC XQ	368 WRIT 13(c)	2FO WRITE DATA	104 A=C R<-	04E C=0 ALL	0CC FSET 10	3E8 WRIT 15(e)	0A4 ->2988
08C ->231A	22E C=C+1 ALL	04E C=0 ALL	043 JNC \$+0B	01C R= 3	087 JC \$+10	141 ?NC XQ	37C RCR 12
198 C=M ALL	270 RAM SLCT	0AA A>C R<-	329 ?NC XQ	270 RAM SLCT	095 ?NC XQ	0A4 ->2950	3C4 ST=0
10A A=C R<-	0E6 C=OB S&X	0AE A>C ALL	0A4 ->29CA	378 READ 13(c)	0A4 ->2925	0CC FSET 10	048 SETF 4
33C RCR 1	038 READ 0(T)	038 READ 0(T)	046 C=0 S&X	26E C=C-1 ALL	13C RCR 8	12F JC \$+25	03B JNC \$+07
31C R= 1	0E6 C=OB S&X	0AE A>C ALL	085 ?NC XQ	270 RAM SLCT	10A A=C R<-	0A1 ?NC XQ	0FC RCR 10
023 JNC \$+04	266 C=C-1 S&X	2FO WRITE DATA	0A4 ->2921	106 A=C S&X	0B1 ?NC XQ	0A4 ->2928	0CA C=B R<-
276 C=C-1 XS	270 RAM SLCT	198 C=M ALL	27E C=C-1 MS	038 READ 0(T)	08C ->232C	1D8 C=OB ALL	0AE A>C ALL
3DC R=R+1	0E6 C=OB S&X	270 RAM SLCT	158 M=C ALL	2EE PC\$0 ALL	241 ?NC GO	34A ?A90 R<-	1D8 C=OB ALL
3DC R=R+1	2FO WRITE DATA	038 READ 0(T)	2FE PC\$0 MS	02F JC \$+05	0AA ->2A90	027 JC \$+04	051 ?NC XQ
276 C=C-1 XS	0E6 C=OB S&X	0A4 C=0 R<-	3C7 JC \$-08	130 LDI S&X	22D ?NC XQ	309 ?NC XQ	0AC ->2B14
3E3 JNC \$-04	226 C=C+1 S&X	2FO WRITE DATA	24C FSET 9	0CO 192 0	0A8 ->2A8B	050 ->14C2	1B8 C=OB ALL

## 29 BLOCK

0	1	2	3	4	5	6	7
08A B=A R<-	27A C=C-1 M	3D0 LD8R- F	306 ?A8C S&X	13C RCR 8	04E C=0 ALL	08F JC \$+11	002 ->00F1
0AE A>C ALL	276 C=C-1 XS	08D ?NC XQ	03F JC \$+07	0CA C=B R<-	270 RAM SLCT	226 C-C+1 S&X	378 READ 13(c)
306 ?A8C S&X	3EJ JC \$-03	08C ->2323	366 ?A8C S&X	17C RCR 6	338 READ 12(b)	03B JNC \$+07	110 LD8R- 4
3B7 JC \$-0A	03C RCR 3	198 C=M ALL	360 ?C RTN	1D8 C=OB ALL	01C R= 3	130 LDI S&X	01C R= 3
366 ?A8C S&X	27E C=C-1 MS	JE0 RTN	302 ?A8C OR	344 CLR 12	0CC FSET 10	01D 29 J	10A A=C R<-
02F JC \$+05	245 ?NC GO	141 ?NC XQ	01F JC \$+03	27E C=C-1 MS	017 JC \$+02	37C RCR 12	070 M=C ALL
302 ?A8C ER	0AA ->2A91	0A4 ->2950	362 ?A8C OR	1FE C=C+C MS	1E2 C=C+C OR	244 CLR 9	139 ?NC XQ
397 JC \$-0E	3A3 JNC \$-0C	0AA A>C R<-	360 ?C RTN	1FE C=C+C MS	10A A=C R<-	1D1 ?NC GO	088 ->224E
36A ?A8C R<-	158 M=C ALL	1D8 C=OB ALL	07C RCR 4	013 JNC \$+02	3E0 RTN	002 ->0074	2E6 PC\$0 S&X
383 JNC \$-10	13C RCR 8	3A1 ?NC XQ	08A B=A R<-	348 SETF 12	01C R= 3	266 C=C-1 S&X	027 JC \$+04
13C RCR 8	10A A=C R<-	080 ->20E8	0CA C=B R<-	2E6 PC\$0 S&X	0AE A>C ALL	266 C=C-1 S&X	309 ?NC XQ
3C9 ?NC GO	34D ?NC XQ	23C RCR 2	0FC RCR 10	317 JC \$-1E	2E6 PC\$0 S&X	0FC RCR 10	050 ->14C2
0AA ->2A92	0AA ->29D3	01B JNC \$+03	1D8 C=OB ALL	00A A=0 R<-	0BD ?NC GO	108 SETF 8	03B JNC \$+07
1BC RCR 11	2ED ?NC XQ	0D5 ?NC XQ	23E C=C+1 MS	04E C=0 ALL	09E ->272F	24D ?NC XQ	005 ?NC XQ
108 SETF 8	0A4 ->29BB	088 ->2235	067 JC \$+0C	1D8 C=OB ALL	05A C=0 M	0A8 ->2A93	088 ->2235
330 FETCH S&X	39C R= 0	1D8 C=OB ALL	3E0 RTN	3E0 RTN	226 C=C+1 S&X	3C5 ?NC GO	23E C=C+1 MS

## 29 BLOCK

8	9	A	B	C	D	E	F
06F JC \$+0D	009 ?NC GO	3D8 C>ST X	0CC FSET 10	221 545 !	08F JC \$+11	3E0 RTN	130 LDI S&X
34D ?NC XQ	082 ->2002	2FO WRITE DATA	053 JNC \$+0A	0FC RCR 10	01C R= 3	16E A=A+1 ALL	284 644 D
0A4 ->29D3	09C R= 5	04E C=0 ALL	0AE A>C ALL	1E0 GOTO ADR	023 JNC \$+04	0FC RCR 10	1E0 GOTO ADR
2E5 ?NC XQ	310 LD8R- C	270 RAM SLCT	10E A=C ALL	1C6 A=A-C S&X	1A2 A=A-1 ER	046 C=0 S&X	2C9 ?NC XQ
0A4 ->29B9	01C R= 3	378 READ 13(c)	18C RCR 11	1C2 A=A-C OR	037 JC \$+06	39C R= 0	08E B=A ALL
37C RCR 12	130 LDI S&X	266 C=C-1 S&X	330 FETCH S&X	3A0 ?NC RTN	1A2 A=A-1 OR	058 G=C OR,+	08C ->23B2
2E2 ?C\$0 ER	120 288	368 WRIT 13(c)	3E0 RTN	0BB JNC \$+17	1A2 A=A-1 OR	345 ?NC XQ	08E B=A ALL
01F JC \$+03	2FO WRITE DATA	0C4 CLR 10	34D ?NC XQ	01C R= 3	02F JC \$+05	0A4 ->29D1	0CE C=B ALL
2F6 ?C\$0 XS	0B0 C=N ALL	0B1 ?NC XQ	0A4 ->29B3	0CC FSET 10	1A2 A=A-1 ER	0AE A>C ALL	158 M=C ALL
3D3 JNC \$-06	270 RAM SLCT	08C ->232C	359 ?NC XQ	0B7 JC \$+16	3E0 RTN	058 G=C OR,+	01E A=0 MS
0B0 C=N ALL	266 C=C-1 S&X	001 ?NC XQ	0A4 ->29D6	162 A=A+1 OR	1A2 A=A-1 ER	270 RAM SLCT	399 ?NC XQ
36A ?A8C R<-	10A A=C R<-	080 ->2000	0AA A>C R<-	162 A=A+1 OR	1A2 A=A-1 ER	07C RCR 4	0A4 ->29E6
0DB JNC \$+1B	038 READ 0(T)	0BD ?NC XQ	10A A=C R<-	162 A=A+1 OR	1A2 A=A-1 ER	39C R= 0	1F6 C=C+C MS
311 ?NC XQ	3D8 C>ST X	09C ->272F	270 RAM SLCT	371 ?NC GO	1A2 A=A-1 ER	098 C=6 OR,+	29E C=0-C MS
0A0 ->28C4	084 CLR 5	3C1 ?NC GO	07C RCR 4	086 ->21DC	1A2 A=A-1 ER	0E6 C=OB S&X	1F6 C=C+C MS
2EE ?C\$0 ALL	208 SETF 2	002 ->0FO	130 LDI S&X	0CC FSET 10	1AE A=A-1 ALL	31C R= 1	05B JNC \$+0B

## 2A BLOCK

0	1	2	3	4	5	6	7
23E C=C+1 MS	222 C=C+1 BR	38D ?NC XQ	1CD ?NC XQ	061 ?NC XQ	0DC R= 10	19C R= 11	31D ?NC XQ
23E C=C+1 MS	04B JNC \$+09	044 ->29E3	048 ->2A73	044 ->2918	395 ?NC XQ	2E2 ?C80 BR	044 ->29C7
0BB JNC \$+17	0FC RCR 10	130 LDI S8X	141 ?NC XQ	10A A=C R<-	044 ->29E5	36F JC \$-13	353 JNC \$-16
1F5 ?NC XQ	226 C=C+1 S8X	00F 15 0	044 ->2950	34D ?NC XQ	3BB JNC \$-09	0D0 LDPR- 3	278 READ 9(0)
048 ->2A7D	31C R= 1	10C ?FSET 8	359 ?NC XQ	044 ->29D3	35C R= 12	3BB JNC \$-09	2EE ?C80 ALL
391 ?NC XQ	2E2 ?C80 BR	023 JNC \$+04	044 ->29D6	08D ?NC XQ	262 C=C-1 BR	38D ?NC XQ	340 ?NC RTN
0A4 ->29E4	1CF JC \$+39	391 ?NC XQ	09D ?NC XQ	08C ->2337	043 JNC \$+08	044 ->29E3	391 ?NC XQ
1CD ?NC XQ	08D ?NC XQ	044 ->29E4	044 ->2927	3F8 READ 15(e)	19C R= 11	1FE C=C+C MS	044 ->29E4
0A8 ->2A73	08C ->2323	053 JNC \$+0A	269 ?NC XQ	046 C=0 S8X	2E2 ?C80 BR	2F8 ?C80 MS	278 READ 9(0)
083 JNC \$+10	18B JNC \$+31	1F5 ?NC XQ	08C ->239A	3E8 WRIT 15(e)	387 JC \$-0A	333 JNC \$-1A	3CE RSHFC ALL
1FE C=C+C MS	222 C=C+1 BR	048 ->2A7D	07C RCR 4	3C3 ?NC 80	090 LDPR- 2	0FC RCR 10	3CE RSHFC ALL
195 ?NC GO	1A7 JC \$+34	226 C=C+1 S8X	269 ?NC XQ	002 ->00F1	0FC RCR 10	226 C=C+1 S8X	268 WRIT 9(0)
0AA ->2A65	104 CLRF 8	391 ?NC XQ	08C ->239A	1FE C=C+C MS	05D ?NC GO	31C R= 1	3C3 JNC \$-08
2FE ?C80 MS	222 C=C+1 BR	044 ->29E4	10C ?FBET 8	2FE ?C80 MS	04A ->2A17	2E2 ?C80 BR	130 LDI S8X
1F7 JC \$+3E	017 JC \$+02	38D ?NC XQ	063 JNC \$+0C	037 JC \$+06	262 C=C-1 BR	30F JC \$-1F	0F0 240 P
35C R= 12	108 SETF 8	044 ->29E3	0FC RCR 10	OCE C=B ALL	383 JNC \$-10	2D0 LDPR- B	0AE A>C ALL

## 2A BLOCK

8	9	A	B	C	D	E	F
158 M=C ALL	104 CLRF 8	34A ?A80 R<-	37C RCR 12	372 ?A8C P=0	158 M=C ALL	198 C=M ALL	3E8 WRIT 15(e)
278 READ 9(0)	04E C=0 ALL	043 JNC \$+08	3C4 ST=0	04B JNC \$+09	1AA A=A-1 R<-	312 ?A8C P=0	0B0 C=N ALL
023 JNC \$+04	26E C=C-1 ALL	01B JNC \$+03	048 SETF 4	306 ?A8C S8X	10C ?FSET 8	01B JNC \$+03	10A A=C R<-
166 A=A+1 S8X	040 SLCT P	005 ?NC XQ	08A B=A R<-	34F JC \$-0B	141 ?NC XQ	30A ?A8C R<-	0DD ?NC XQ
3CE RSHFC ALL	05C R= 4	088 ->2335	1D8 C>H ALL	366 ?A8C S8X	044 ->2950	3BF JC \$-09	08C ->2337
3CE RSHFC ALL	0E0 SLCT 0	23E C=C+1 MS	10E A=C ALL	02F JC \$+05	080 C=M ALL	0AE A>C ALL	3F8 READ 15(e)
2EE ?C80 ALL	070 N=C ALL	033 JNC \$+06	080 C=N ALL	302 ?A8C BR	0AA A>C R<-	070 N=C ALL	3E0 RTN
3E7 JC \$-04	0CC ?FSET 10	2E6 ?C80 S8X	0CA C=B R<-	38F JC \$-0F	1D8 C>H ALL	07C RCR 4	3C4 ST=0
198 C=M ALL	1A7 JC \$+34	3DF JC \$-05	070 N=C ALL	362 ?A8C BR	10E A=C ALL	106 A=C S8X	01B JNC \$+03
0AE A>C ALL	095 ?NC XQ	309 ?NC XQ	0AE A>C ALL	37B JNC \$-11	144 CLRF 6	065 ?NC XQ	3C4 ST=0
3E0 RTN	0A4 ->2925	050 ->14C2	1D8 C>H ALL	0AE A>C ALL	028 JNC \$+05	050 ->1419	088 SETF 5
3F8 READ 15(e)	10C ?FSET 8	033 JNC \$+06	051 ?NC XQ	0E3 JNC \$+1C	3E5 ?NC XQ	0AO SLCT P	0CC ?FSET 10
226 C=C+1 S8X	013 JNC \$+02	359 ?NC XQ	0AC ->2B14	1A9 ?NC XQ	048 ->2A99	01C R= 3	027 JC \$+04
01F JC \$+03	13C RCR 8	044 ->29D6	1D8 C>H ALL	018 ->066A	14C ?FSET 6	34C ?FSET 12	2E3 ?NC XQ
266 C=C-1 S8X	052 C=0 P=0	2E5 ?NC XQ	232 C=C+1 P=0	04E C=0 ALL	03F JC \$+07	360 ?C RTN	044 ->29B9
3E0 RTN	1D8 C>H ALL	0A4 ->29B9	0AE A>C ALL	0AA A>C R<-	172 A=A+1 P=0	046 A>C S8X	103 JNC \$+20

## 2B BLOCK

0	1	2	3	4	5	6	7
0AA A>C R<-	1A9 ?NC GO	282 C=0-C BR	282 C=0-C BR	3E0 RTN	222 C=C+1 BR	08B JNC \$+11	3E0 RTN
1BC RCR 11	01A ->066A	1E2 C=C+C BR	1E2 C=C+C BR	1E2 C=C+C BR	137 JC \$+26	18D ?NC XQ	1E2 C=C+C BR
23A C=C+1 M	27A C=C-1 M	0FB JNC \$+1F	053 JNC \$+0A	0EB JNC \$+1D	148 SETF 6	0AC ->2B63	02F JC \$+05 XS
330 FETCH S8X	3BB JNC \$-09	222 C=C+1 BR	222 C=C+1 BR	2E2 ?C80 BR	04C ?FSET 4	1A2 A=A-1 BR	2F6 ?C80 XS
2F6 ?C80 XS	1A2 A=A-1 BR	222 C=C+1 BR	222 C=C+1 BR	OFF JC \$+1F	360 ?C RTN	053 JNC \$+0A	360 ?C RTN
3E8 JNC \$-03	04B JNC \$+09	340 ?NC RTN	03B JNC \$+07	236 C=C+1 XS	329 ?NC XQ	0AA A>C R<-	051 ?NC GO
23A C=C+1 M	0AA A>C R<-	1F6 C=C+C XS	1F6 C=C+C XS	0EF JC \$+1D	329 ?NC XQ	310 LDPR- C	0AE ->2B14
330 FETCH S8X	262 C=C-1 BR	028 JNC \$+05	34B JNC \$+0B	236 C=C+1 XS	01C R= 3	276 C=C-1 XS	329 ?NC XQ
276 C=C-1 XS	262 C=C-1 BR	1F6 C=C+C XS	1F6 C=C+C XS	0FD JC \$+1B	044 ->29CA	266 C=C-1 S8X	360 ?C RTN
3EF JC \$-03	266 C=C-1 S8X	01B JNC \$+03	39B JNC \$-0D	28C ?FSET 7	08C ?FSET 5	270 RAM SLCT	0EA C>B R<-
27A C=C-1 M	270 RAM SLCT	2F6 ?C80 XS	2F6 ?C80 XS	125 ?C GO	317 JC \$-1E	10A A=C R<-	18D ?NC XQ
276 C=C-1 XS	10A A=C R<-	34F JC \$-17	38B JNC \$-0F	08F ->2349	139 ?NC XQ	038 READ 0(T)	0AC ->2B63
1E1 ?C GO	038 READ 0(T)	0EA C>B R<-	329 ?NC XQ	18D ?NC XQ	088 ->224E	0FC RCR 10	0EA C>B R<-
01B ->067B	37C RCR 12	0CA C=B R<-	044 ->29CA	0AC ->2B63	1ED ?NC GO	3E0 RTN	276 C=C-1 XS
148 SETF 6	1A2 A=A-1 BR	18D ?NC XQ	23C RCR 2	18D ?NC XQ	01A ->067B	1A2 A=A-1 BR	3DB JNC \$-05
0BC ?FSET 5	37C RCR 12	0AC ->2B63	0CA C=B R<-	0AC ->2B63	1E2 C=C+C BR	37C RCR 12	203 JNC \$-40

## 2B BLOCK

8	9	A	B	C	D	E	F
004 CLRF 3	1D8 C>H ALL	07F JC \$+0F	023 JNC \$+04	0E6 C>B ALL	158 M=C ALL	01C R= 3	008 SETF 3
378 READ 13(c)	0AE A>C ALL	01C R= 3	04A C=0 R<-	070 N=C ALL	34D ?NC XQ	0DA C=B M	223 JNC \$-3C
01C R= 3	270 RAM SLCT	38A RSHFA R<-	23C RCR 2	07C RCR 4	044 ->29D3	270 RAM SLCT	01C R= 3
110 LDPR- 4	070 N=C ALL	38A RSHFA R<-	3B3 JNC \$+0A	01C R= 3	2E3 ?NC XQ	07C RCR 4	198 C=M ALL
158 M=C ALL	038 READ 0(T)	0A6 A>C S8X	23C RCR 2	10A A=C R<-	044 ->29B9	10E A=C ALL	10A A=C R<-
01C R= 3	23E C=C+1 MS	086 A>C XS	1D8 C>H ALL	139 ?NC XQ	08A B=A R<-	0B0 C=N ALL	07C RCR 4
0FC RCR 10	143 JNC \$+28	23C RCR 2	046 C=0 S8X	088 ->224E	31C R= 1	0E6 C>B ALL	28B JNC \$-2F
0CA C=B R<-	27E C=C-1 MS	0CA C=B R<-	270 RAM SLCT	2E6 ?C80 S8X	0DA C=B M	273 JNC \$-32	130 LDI S8X
0EE C>B ALL	11E A=C MS	008 SETF 3	1D8 C>H ALL	0CB JNC \$+19	07C RCR 4	30C ?FSET 1	020 32
130 LDI S8X	31C R= 1	17C RCR 6	3E0 RTN	0D5 ?NC XQ	10A A=C R<-	033 JNC \$+06	106 A=C S8X
0BF 191 ?	36A ?A8C R<-	37E ?A8C MS	0B0 C=N ALL	088 ->2235	0FC RCR 10	046 C=0 S8X	31C R= 1
226 C=C-1 S8X	023 JNC \$+04	013 JNC \$+02	28J JNC \$+30	23E C=C+1 MS	36A ?A8C R<-	06E A>B ALL	3F8 READ 15(e)
0AE A>C ALL	17C RCR 6	17C RCR 6	1D8 C>H ALL	3DB JNC \$+05	087 JC \$+16	08D ?NC XQ	36A ?A8C R<-
1D8 C>H ALL	36A ?A8C R<-	2F0 WRITE DATA	013 JNC \$+02	0FC RCR 10	34A ?A80 R<-	08C ->2323	3F3 JNC \$-02
366 ?A8C S8X	0E7 JC \$+1C	03B JNC \$+07	0AE A>C ALL	0AA A>C R<-	057 JC \$+0A	23B JNC \$-39	3B8 READ 14(d)
16B JNC \$+2D	34A ?A80 R<-	30C ?FSET 1	0FC RCR 10	10E A=C ALL	046 C=0 S8X	198 C=M ALL	3E0 RTN

## 2C BLOCK

	0	1	2	3	4	5	6	7
07F	127	8	04E C=0 ALL	042 C=0 ER	36A ?NC R<-	320 DSPTOG	3B9 ?NC XQ	03A 58 :
061	97	a	3F0 PRPH SLCT	36A ?ABC R<-	09F JC 8+13	0DE C=B MS	01C ->07F6	366 ?ABC SIX
062	98	b	05C R= 4	3B7 JC 8-0A	09E B=A MS	16D ?NC GO	37C RCR 12	3AB JNC 8-0B
063	99	c	190 LDR- 6	3C1 ?NC XQ	130 LDI SIX	0BA ->2E5B	056 C=0 XS	28C ?FSET 7
064	100	d	130 LDI SIX	0B0 ->2CF0	01F 31 -	JSE ?A#0 MS	175 ?NC XQ	04F JC 8+09
065	101	e	08C 140 L	06B JNC 8+0D	10C ?FSET 8	027 JC 8+04	0B0 ->2C5D	3D8 C<>ST X
000	0	f	3JC RCR 1	23C RCR 2	023 JNC 8+04	10C ?FSET 8	2AB JNC 8-2B	2B8 R= 13
060	96	g	10E A=C ALL	3C1 ?NC XQ	3E8 WRIT 15(e)	371 ?NC XQ	130 LDI SIX	11E A=C MS
006	6	h	2E5 ?NC XQ	0B0 ->2CF0	1BE A=A-1 MS	0B0 ->2CDC	080 128 0	0DE C=B MS
004	4	i	0A4 ->2B99	2E0 DSPOFF	037 JC 8+06	149 ?NC XQ	0A3 JNC 8+14	37E ?ABC MS
005	5	j	31C R= 1	12B JNC 8+25	226 C=C#1 SIX	024 ->0952	130 LDI SIX	033 JNC 8+06
001	1	k	2EA ?C#0 R<-	06E A>B ALL	1BE A=A-1 MS	01C R= 3	0C0 192 0	053 JNC 8+0A
00C	12	l	057 JC 8+0A	130 LDI SIX	01F JC 8+03	2E5 ?NC XQ	08B JNC 8+11	3D8 C<>ST X
01D	29	m	130 LDI SIX	005 5 E	3E8 WRIT 15(e)	0A4 ->2B99	106 A=C SIX	3E8 WRIT 15(e)
07E	126	n	005 5 E	01C R= 3	3E8 JNC 8-03	23C RCR 2	016 A=0 XS	3B8 READ 14(d)
00D	13	o	01C R= 3	042 C=0 ER	2E0 DSPOFF	08E B=A ALL	130 LDI SIX	130 LDI SIX
							3D8 C<>ST X	020 32

## 2C BLOCK

	8	9	A	B	C	D	E	F
2DE ?B#0	MS	073 JNC 8+0E	090 LDR- 2	141 ?NC XQ	106 A=C SIX	0FC RCR 10	24C ?FSET 9	130 LDI SIX
023 JNC 8+04	046 A>C SIX	310 LDR- C	0A4 ->2950	016 A=0 XS	10E A=C ALL	03F JC 8+07	010 16 P	
07E A<>B MS	3D8 C<>ST X	01C R= 3	2C1 ?NC XQ	046 C=0 SIX	01D ?NC XQ	3CB CLRKEY	270 RAM SLCT	
1BE A=A-1 MS	144 CLRF 6	330 FETCH SIX	0A4 ->29B0	270 RAM SLCT	0B4 ->2D07	3CC ?KEY	130 LDI SIX	
07E A<>B MS	3D8 C<>ST X	366 ?ABC SIX	31C R= 1	130 LDI SIX	08E B=A ALL	037 JC 8+06	0FD 253 }	
370 C=C OR A	104 A=C SIX	033 JNC 8+06	042 C=0 ER	07F 127 1	39C R= 0	24B SETF 9	3F0 PRPH SLCT	
3E8 WRIT 15(e)	180 POP ADR	222 C=C#1 ER	26A C=C-1 R<-	366 ?ABC SIX	058 G=C ER,+ 26B ?NC XQ	19C R= 11		
3E0 RTN	330 FETCH SIX	3E3 JNC 8-04	360 ?C RTN	385 ?C XQ	046 C=0 SIX	000 ->009B	04A C=0 R-	
016 A=0 XS	170 PUSH ADR	130 LDI SIX	0FC RCR 10	01D ->07E1	270 RAM SLCT	3CC ?KEY	0DC R= 10	
130 LDI SIX	046 A>C SIX	03A 58 :	05C R= 4	0CE C=B ALL	051 ?NC XQ	360 ?C RTN	090 LDR- 2	
020 32	346 ?A#0 SIX	35B JNC 8-15	102 A=C ER	10E A=C ALL	0B4 ->2D14	130 LDI SIX	29C R= 7	
306 ?A>C SIX	3A0 ?NC RTN	03C RCR 3	01D ?NC XQ	01C R= 3	373 JNC 8-12	380 896 0	090 LDR- 2	
097 JC 8+12	006 A=0 SIX	056 C=0 XS	0B4 ->2D07	07C RCR 4	2E0 DSPOFF	1E6 C=C#C SIX	05C R= 4	
130 LDI SIX	31B JNC 8-1D	236 C=C#1 XS	08E B=A ALL	266 C=C-1 SIX	320 DSPTOG	266 C=C-1 SIX	090 LDR- 2	
060 96	04E C=0 ALL	33B JNC 8-19	39C R= 0	0DD ?C GO	10C ?FSET 8	3FB JNC 8-01	31C R= 1	
306 ?A>C SIX	15C R= 6	00E A=0 ALL	058 B=C ER,+ 08F ->2337	360 ?C RTN	360 ?C RTN	360 ?C RTN	090 LDR- 2	

## 2D BLOCK

	0	1	2	3	4	5	6	7
128 WRIT 4(L)	23C RCR 2	0AE A>C ALL	056 C=0 XS	08C ?FSET 5	01C 28 \	3AB WRIT 14(d)	39D ?NC GO	
128 WRIT 4(L)	2EA ?C#0 R<-	1EB WRIT 7(0)	106 A=C SIX	0E7 JC 8+1C	366 ?ABC SIX	12B JNC 8+25	026 ->09E3	
128 WRIT 4(L)	36D ?C XQ	178 READ 5(H)	39C R= 0	00C ?FSET 3	027 JC 8+04	088 SETF 3	366 ?ABC SIX	
3E0 RTN	059 ->16DB	37C RCR 12	058 G=C ER,+ 023 JNC 8+04	130 LDI SIX	38B READ 14(d)	0AF JC 8+15		
149 ?NC XQ	31C R= 1	10A A=C R<-	38B READ 14(d)	054 84 T	398 C=ST X	265 ?NC XQ		
024 ->0952	238 READ 8(P)	0AE A>C ALL	17C RCR 6	00B 11 K	3E0 RTN	3AB WRIT 14(d)	020 ->0899	
06E A<>B ALL	37C RCR 12	1A8 WRIT 6(N)	3D8 C<>ST X	3E0 RTN	29D ?NC XQ	00C ?FSET 3	083 JNC 8+10	
01C R= 3	10E A=C ALL	0AE A>C ALL	304 CLRF 1	28C ?FSET 7	058 ->16A7	1A7 JC 8+34	38B READ 14(d)	
0CC ?FSET 10	1FB READ 7(0)	39C R= 0	3D8 C<>ST X	027 JC 8+04	00C ?FSET 3	28C ?FSET 7	13C RCR 8	
2E5 ?NC GO	37C RCR 12	098 C=6 ER,+ 13C RCR 8	130 LDI SIX	29D ?NC XQ	0AB JNC 8+15	3D8 C<>ST X		
0A6 ->2B99	104 A=C R<-	16B WRIT 5(H)	34B WRIT 14(d)	022 ->08B2	130 LDI SIX	308 SETF 1		
16E A=A-1 ALL	0AE A>C ALL	3E0 RTN	1F6 C=C#C XS	189 ?NC GO	07F 127 1	3D8 C<>ST X		
2C9 ?NC GO	22B WRIT 8(P)	0E6 C>B SIX	1F6 C=C#C XS	130 LDI SIX	0BA ->2E62	106 A=C SIX	17C RCR 6	
0A6 ->2B92	188 READ 6(N)	125 ?NC XQ	12F JC 8+25	087 135 6	084 CLRF 5	39C R= 0	3AB WRIT 14(d)	
238 READ 8(P)	37C RCR 12	01C ->0749	346 ?A#0 SIX	3E0 RTN	38B READ 14(d)	098 C=G ER,+ 0D9 ?NC XQ		
31C R= 1	10A A=C R<-	0E6 C>B SIX	087 JC 8+10	130 LDI SIX	398 C=ST X	2E6 ?C#0 SIX	020 ->0836	

## 2D BLOCK

	8	9	A	B	C	D	E	F
179 ?NC XQ	3B8 READ 14(d)	019 ?NC XQ	3B0 ?NC XQ	29E C=0-C MS	0FE COB MS	0A4 ->29E6	093 JNC 8+12	
024 ->095E	01B JNC 8+03	08C ->2306	0A4 ->29E3	260 SETHEX	0E0 SLCT 0	313 JNC 8-1E	31C R= 1	
3BD ?NC XQ	109 ?NC XQ	04E C=0 ALL	01E A=0 MS	0FE C>B MS	2D4 ?R= 13	30C ?FSET 1	0A0 SLCT P	
020 ->08EF	088 ->2E42	270 RAM SLCT	046 C=0 SIX	0DE C=B MS	157 JC 8+2A	077 JC 8+0E	130 LDI SIX	
125 ?NC XQ	046 C=0 SIX	009 ?NC XQ	270 RAM SLCT	27E C=C-1 MS	278 READ 9(Q)	38C ?FSET 0	01B 27 [	
024 ->0949	098 C=6 ER,+ 020 ->0836	20C ?FSET 2	058 JNC 8+08	222 C=C#1 ER	03C JNC 8+18	031 ?NC XQ		
31D ?NC GO	173 ?NC XQ	141 ?NC XQ	01B JNC 8+03	38C ?FSET 0	04F JNC 8+15	27E C=C-1 MS	088 ->2E0C	
002 ->00C7	080 ->2C5D	044 ->2950	029 ?NC XQ	04B JNC 8+09	214 ?R= 2	087 JC 8+16	278 READ 9(Q)	
039 ?NC XQ	131 ?NC XQ	01E A=0 MS	0B8 ->2E0A	0FE C>B MS	057 JC 8+0A	27E C=C-1 MS	2F6 ?C#0 XS	
0B4 ->2D0E	088 ->2E4C	08E B=A ALL	0E0 SLCT 0	130 LDI SIX	262 C=C-1 ER	047 JC 8+14	253 JNC 8-36	
278 READ 9(Q)	363 JNC 8-14	2E5 ?NC XQ	35C R= 12	01A 26 Z	3DC R=R+1	0C3 JNC 8+18	029 ?NC XQ	
2FE ?C#0 MS	28C ?FSET 7	0A4 ->2B99	0A0 SLCT P	031 ?NC XQ	050 LDR- 1	314 ?R= 1	088 ->2E0A	
0FE C>B MS	0B8 ->2E10	2EA ?C#0 R<-	2A0 SETDEC	058 G=C ER,+ 087 JC 8+16	3B8 JNC 8-0A	087 JC 8+16	23B JNC 8-39	
3D9 ?NC XQ	141 ?NC XQ	02B JNC 8+05	2FE ?C#0 MS	3B3 JNC 8-0A	3D4 R=R-1	394 ?R= 0	0A0 SLCT P	
01C ->07F6	0A4 ->2950	06E A>B ALL	07B JNC 8+0F	260 SETHEX	0A0 SLCT P	0A7 JC 8+14	38D ?NC XQ	
				399 ?NC XQ	30C ?FSET 1	0A4 ->29E3		

## 2E BLOCK

0	1	2	3	4	5	6	7
104 CLR 8	130 LDI S8X	08C ->2323	1BE A=A-1 MS	207 JC 8-40	020 32	05E C=0 MS	130 LDI S8X
02B JNC 8+05	07F 127 8	329 ?NC XD	000 NOP	223 JNC 8-3C	0DE C=B	303 JNC 8-06	07F 127 8
0A0 SLCT P	366 ?A+C S8X	044 ->29CA	38B JNC 8-0F	278 READ 9(Q)	27E C=C-1	308 READ 14(d)	366 ?A+C S8X
38D ?NC XD	393 JNC 8-0E	046 C=0 S8X	11E A=C MS	11E A=C MS	06F JC 8+0B	358 ST=C X	07F JC 8+0F
0A4 ->29E3	278 READ 9(Q)	270 RAM SLCT	141 ?NC XD	09E B=A MS	11E A=C MS	00C ?FSET 3	179 READ 5(M)
108 SETF 8	346 ?A+B S8X	0AE A>C ALL	044 ->2950	3D9 ?NC XD	23E C=C+1	137 JC 8+26	31C R= 1
18D ?NC XD	097 JC 8+12	268 WRIT 9(Q)	359 ?NC XD	01C ->27F6	35E ?A+B MS	13C RCR 8	2EA ?C=0 R-
014 ->0563	27E C=C-1 MS	063 JNC 8+0C	044 ->29D6	35E ?A+B MS	023 JNC 8+04	308 C>ST X	03F JC 8+07
31D ?NC GO	2FE ?C=0 MS	23E C=C+1 MS	0BE A>C MS	340 ?NC RTN	3E8 WRIT 15(e)	2DC R= 13	310 LDPR-C
002 ->00C7	02F JC 8+05	023 JNC 8+04	11E A=C MS	1BE A=A-1 MS	1BE A=A-1 MS	308 C>ST X	0FE C>B MS
130 LDI S8X	241 ?NC XD	265 ?NC XD	2FC RCR 13	38B READ 14(d)	3E3 JNC 8-04	17C RCR 6	308 C>B MS
01C 28 \	00C ->390	029 ->0899	31C R= 1	3E3 JNC 8-04	046 C=0 S8X	348 WRIT 14(d)	3D9 ?NC XD
39C R= 0	28D ?NC GO	2E3 JNC 8-24	300 LDER-F	130 LDI S8X	3F0 PRPH	046 C=0 S8X	01C ->07F6
058 G=C PR,+	08A ->22AF	0AE A>C ALL	08D ?NC XD	01F 31	270 RAM SLCT	39C R= 0	01B JNC 8+03
399 ?NC GO	0AE A>C ALL	399 ?NC XD	08C ->2323	3E8 WRIT 15(e)	268 WRIT 9(Q)	098 C=6 PR,+	109 ?NC XD
0A6 ->29E6	08D ?NC XD	0A4 ->29E6	17E A=A+1 MS	130 LDI S8X	3E0 RTN	106 A=C S8X	08B ->2E42

## 2E BLOCK

8	9	A	B	C	D	E	F
261 ?NC GO	141 ?NC XD	268 WRIT 9(Q)	1FA C=C+C M	050 ->14C2	104 CLR 8	23E C=C+1 MS	262 C=C-1 PR
0B6 ->2D98	0A4 ->2950	015 ?NC GO	07C RCR 4	133 JNC 8+26	3D8 C>ST X	2D7 JC 8-26	262 C=C-1 PR
385 ?NC XD	01E A=0 MS	08A ->2E05	146 A=A+C S8X	244 CLR 9	033 JNC 8+06	0AA A>C R-	266 C=C-1 S8X
01C ->07E1	130 LDI S8X	04E C=0 ALL	238 READ 8(P)	341 ?NC XD	108 SETF 8	10A A=C RC-	270 RAM SLCT
2DC R= 13	0F1 241 \	270 RAM SLCT	1BC RCR 11	080 ->20E8	304 CLR 1	070 N=C ALL	10A A=C R-
310 LDPR-C	39C R= 0	15C R= 6	046 A>C S8X	0AA A>C R-	3D8 C>ST X	34D ?NC XD	038 READ 0(T)
0FE C>B MS	058 G=C PR,+	310 LDPR-C	106 A=C S8X	070 N=C ALL	08D ?NC XD	044 ->29D3	37C RCR 12
3C1 ?NC XD	399 ?NC XD	05C R= 4	358 ST=C X	004 CLR 3	08C ->2323	10C ?FSET 8	1A2 A=A-1 PR
0B0 ->2CF0	0A4 ->29E6	3D0 LDPR-F	03C RCR 3	10A A=C R-	080 C=N ALL	0EB JNC 8+1D	37C RCR 12
251 ?NC GO	080 C=N ALL	310 LDPR-C	228 WRIT 8(P)	34B ?NC XD	10E A=C ALL	008 SETF 3	282 C=0-C PR
0B6 ->2D94	39C R= 0	10E A=C ALL	3E0 RTN	044 ->29D3	139 ?NC XD	2ED ?NC XD	1E2 C=C+C PR
2C9 ?NC XD	058 G=C PR,+	38B READ 14(d)	2E6 ?C=0 S8X	044 ->29BB	088 ->224E	044 ->29B8	397 JC 8-0E
0B8 ->23B2	399 ?NC XD	3B0 C=C AND A	117 JC 8+22	044 ->29BB	2E6 ?C=0 S8X	37C RCR 12	1E2 C=C+C PR
39C R= 0	0A4 ->29E6	23C RCR 2	04E C=0 ALL	3D8 C>ST X	303 JNC 8-20	1A2 A=A-1 PR	0EF JC 8+1D
098 C=G PR,+	0AE A>C ALL	106 A=C S8X	070 N=C ALL	30C ?FSET 1	005 ?NC XD	04B JNC 8+09	1E2 C=C+C PR
070 N=C ALL	27E C=C-1 MS	1FA C=C+C M	309 ?NC XD	027 JC 8+04	088 ->2235	0AA A>C R-	177 JC 8+2E

## 2F BLOCK

0	1	2	3	4	5	6	7
1E2 C=C+C PR	328 WRIT 12(b)	236 C=C+1 XS	056 C=0 XS	0A4 ->29B9	21C R= 2	03C RCR 3	0CE C=B ALL
363 JNC 8-14	0B0 ?NC XD	04F JC 8+09	23C RCR 2	31C R= 1	098 C=6 PR,+	22E C=C+1 ALL	03C RCR 3
1DD ?NC XD	08C ->2337	359 ?NC XD	08D ?NC XD	044 C=0 R-	001 ?NC XD	0EE C>B ALL	106 A=C S8X
0AC ->2877	38B READ 14(d)	0A4 ->29B6	08C ->2323	0EE C>B ALL	020 ->0800	3B9 ?NC XD	01E A=0 MS
34B JNC 8-17	358 ST=C X	2E3 ?NC XD	2E5 ?NC XD	0CE C=B ALL	0C3 JNC 8+18	0BC ->2FEE	3A1 ?NC XD
0B0 C=N ALL	24C ?FSET 9	0A4 ->29B9	0A4 ->29B9	08D ?NC XD	0AE A>C ALL	104 CLR 8	014 ->05E8
2E6 ?C=0 S8X	3A0 ?NC RTN	37C RCR 12	31C R= 1	08C ->2323	1BC RCR 11	3DS ?NC GO	3B8 READ 14(d)
20F JC 8-3F	3D5 ?NC XD	222 C=C+1 PR	04A C=0 R-	0CE C=B ALL	3D9 ?NC XD	012 ->04F5	31C R= 1
270 RAM SLCT	088 ->22F5	2D7 JC 8-26	0EE C>B ALL	37C RCR 12	01C ->07F6	34D ?NC XD	3D0 LDPR-F
00C ?FSET 3	05F 95	2E3 JNC 8-24	0CE C=B ALL	31B JNC 8-1D	00C ?FSET 3	014 ->05D3	3E8 WRIT 15(e)
04B JNC 8+09	1E2 C=C+C PR	18D ?NC XD	08D ?NC XD	0A6 A>C S8X	073 JNC 8+0E	209 ?NC GO	066 A>B S8X
141 ?NC XD	07F JC 8+0F	0AC ->2B63	08C ->2323	2FC RCR 13	23A C=C+1 M	012 ->0482	01E A=0 MS
0A4 ->2950	2E2 ?C=0 PR	20B JNC 8-3F	0CE C=B ALL	058 G=C PR,+	23A C=C+1 M	3D9 ?NC XD	3A1 ?NC XD
04E C=0 ALL	117 JC 8+22	2ED ?NC XD	37C RCR 12	06E A>B ALL	330 FETCH S8X	01C ->07F6	014 ->05E8
270 RAM SLCT	236 C=C+1 XS	0A1 ->29BB	363 JNC 8-14	01D ?NC XD	106 A=C S8X	3B9 ?NC XD	363 JNC 8-14
2E8 WRIT 11(a)	05F JC 8+0B	37C RCR 12	2E5 ?NC XD	0B4 ->2D07	1A6 A=A-1 S8X	0BC ->2FEE	1A6 A=A-1 S8X

## 2F BLOCK

8	9	A	B	C	D	E	F
3E6 LSHFA ALL	3E6 LSHFA S8X	017 JC 8+02	070 N=C ALL	09C ->27D3	0A4 ->29B6	10C ?FSET 8	018 24 X
21C R= 2	316 ?A+C XS	288 READ 10(t)	098 C=6 PR,+	0CE C=B ALL	02B JNC 8+05	023 JNC 8+04	012 18 R
110 LDPR- 4	01F JC 8+03	158 H=C ALL	398 C=ST X	305 ?NC GO	16E A=A+1 ALL	0EE C>B ALL	00F 15 O
384 CLRF 0	3DC R=R+1	3B0 C=C AND A	001 ?NC XD	092 ->24C1	02D ?NC XD	158 H=C ALL	00D 13 K
210 LDPR- 8	1D6 A=A-C XS	3E0 RTN	020 ->0800	381 ?NC GO	0B4 ->2D0B	0EE C>B ALL	220 544
31C R= 1	04E C=0 ALL	2EE ?C=0 ALL	078 JNC 8+0F	004 ->02E0	16E A=A+1 ALL	104 CLR 8	3E0 RTN
242 C=A-C PR	394 ?R= 0	027 JC 8+04	00C ?FSET 3	044 CLR 4	266 C=C-1 S8X	3D8 C>ST X	00G NOP
01F JC 8+03	360 ?C RTN	198 C=M ALL	03F JC 8+07	104 CLR 8	06E A>B ALL	20C ?FSET 2	000 NOP
102 A=C PR	222 C=C+1 PR	202 C=C+A PR	3B8 READ 14(d)	304 CLR 1	06E A>B ALL	023 JNC 8+04	000 NOP
388 SETF 0	013 JNC 8+02	023 JNC 8+04	358 ST=C X	20C ?FSET 2	3D9 ?NC XD	108 SETF 8	000 NOP
09C R= 5	1E2 C=C+C PR	198 C=M ALL	080 C=N ALL	047 JC 8+08	01C ->07F6	204 CLR 2	000 NOP
01B JNC 8+03	1B6 A=A-1 XS	0AE A>C ALL	0AE A>C ALL	345 ?NC XD	04C ?FSET 4	308 SETF 1	000 NOP
3DC R=R+1	3F3 JNC 8-02	1E4 C=A-C ALL	1BC RCR 11	0A4 ->29D1	3D9 ?NC XD	3D8 C>ST X	000 NOP
3DC R=R+1	10E A=C ALL	2F0 WRITE DATA	1E0 GOTO ADR	2E5 ?NC XD	0B0 ->2CF6	3E0 RTN	000 NOP
1B6 A=A-1 XS	3F8 READ 15(e)	3E0 RTN	06E A>B ALL	0A4 ->29B9	3D9 ?NC GO	3B9 ?NC XD	006 6 F
3EB JNC 8-03	38C ?FSET 0	0CE C=B ALL	34D ?NC XD	359 ?NC XD	012 ->04F6	01C ->07EF	0ED 237 n

## 40 BLOCK

## HP41 DIAGNOSTIC SERVICE MODULE (VERSION 1C) DIS-ASSEMBLER LISTING 5-AUG-81

0	1	2	3	4	5	6	7
020 X0->GO	358 ST=C X	130 LDI S&X	18C RCR 11	112 ->4436	0F9 ?NC X0	2F0 WRITE DATA	39B JNC \$-0D
260 SETHEX	2D8 ST>T	1AA 426 8	180 PDP ADR	269 ?NC X0	10C ->433E	14C ?FSET 6	07B JNC \$+0F
3C8 CLRKEY	26A C=C-1 R-	36A ?A&C R-	03C RCR 3	12C ->4B9A	309 ?NC X0	0F3 JNC \$+1E	288 SETF 7
3CC ?KEY	3F3 JNC \$-02	107 JC \$+20	01C R= 3	348 SETF 12	118 ->46C2	130 LDI S&X	198 C=M ALL
046 C=0 S&X	01B JNC \$+03	18C RCR 11	10A A=C R-	195 ?NC X0	351 ?NC X0	3FF 1023 8	0F5 ?NC X0
3F0 PRPH SLCT	055 ?NC X0	220 C=KEY KY	110 LD&R- 4	110 ->4465	11C ->47D4	266 C=C-1 S&X	10C ->433D
2E0 DSPOFF	100 ->4015	31C R= 1	130 LDI S&X	344 CLRF 12	098 ?NC X0	3FB JNC \$-01	01B JNC \$+03
398 C=ST X	37C RCR 12	03C RCR 3	00B 11 K	375 ?NC X0	11C ->4727	3CC ?KEY	0D5 ?NC X0
23C RCR 2	358 ST=C X	10A A=C R-	01C R= 3	11C ->47DB	014 20 T	0C7 JC \$+18	10C ->4335
3C4 ST=0	1BC RCR 11	0F9 ?NC X0	36A ?A&C R-	130 LDI S&X	003 3 C	320 DSPTOG	01C R= 3
258 T-ST	180 PDP ADR	10C ->433E	005 ?NC GO	285 645 E	005 3 E	130 LDI S&X	1E2 C=C+C ER
0A0 SLCT P	03C RCR 3	130 LDI S&X	132 ->4C35	266 C=C-1 S&X	00C 12 L	1FF 511 8	289 ?C X0
31C R= 1	01C R= 3	018 24 X	130 LDI S&X	3FB JNC \$-01	005 5 E	266 C=C-1 S&X	12D ->4B9A
3D0 LD&R- F	10A A=C R-	36A ?A&C R-	1DA 474 Z	375 ?NC X0	113 275 S	3FB JNC \$-01	28C ?FSET 7
3D0 LD&R- F	110 LD&R- 4	121 ?C GO	36A ?A&C R-	11C ->47DD	04E C=0 ALL	320 DSPTOG	297 JC \$-2E
31C R= 1	01C R= 3	12F ->4B48	0D9 ?NC GO	148 SETF 6	048 WRIT 2(Y)	3CC ?KEY	020 X0->GO

## 40 BLOCK

8	9	A	B	C	D	E	F
04E C=0 ALL	0C4 CLRF 10	028 40 (	36A ?A&C R-	39F JC \$-0D	135 ?NC X0	001 1 A	016 22 V
0A8 WRIT 2(Y)	184 CLRF 11	001 1 A	0C1 ?NC GO	348 SETF 12	104 ->414D	009 9 I	36A ?A&C R- 20
160 ?LOWBAT	31C R= 1	015 21 U	106 ->4130	13D ?NC X0	341 ?NC X0	00E 14 N	303 JNC \$-20
01B JNC \$+03	130 LDI S&X	014 20 T	344 CLRF 12	124 ->494F	108 ->42D0	13F 319 ?	0B9 ?NC X0
21C R= 2	0C5 197 E	00F 15 O	01C R= 3	10C ?FSET 8	0F9 ?NC X0	0B5 ?NC X0	12C ->4B2E
210 LD&R- 8	36A ?A&C R-	029 41 )	1E2 C=C+C ER	02B JNC \$+05	10C ->433E	10C ->4335	135 ?NC X0
2F0 WRITE DATA	02B JNC \$+05	020 32	269 ?C X0	198 C=M ALL	081 ?NC X0	104 CLRF 8	104 ->414D
0D5 ?NC X0	130 LDI S&X	020 32	12D ->4B9A	18C RCR 11	11C ->4720	31C R= 1	025 ?NC X0
10C ->4335	0C4 196 D	120 288	15C R= 6	161 ?NC X0	00B 11 K	130 LDI S&X	130 ->4C09
309 ?NC X0	36A ?A&C R-	2C8 SETF 13	110 LD&R- 4	104 ->4158	005 16 P	36A ?A&C R- 19	104 ->414D
118 ->46C2	117 JC \$+22	0D5 ?NC X0	1D0 LD&R- 7	19D ?NC X0	019 25 Y	33B JNC \$-19	0CC ?FSET 10
3C4 ST=0	081 ?NC X0	10C ->4335	1E0 GOTO ADR	104 ->4167	002 2 B	226 C=C-1 S&X	081 ?NC X0
2C4 CLRF 13	11C ->4720	31C R= 1	0C4 CLRF 10	135 ?NC X0	004 4 D	36A ?A&C R- 11	081 ?NC X0
344 CLRF 12	020 32	104 CLRF 8	130 LDI S&X	104 ->414D	020 32	323 JNC \$-1C	11C ->4720
13D ?NC X0	020 32	130 LDI S&X	0C6 198 F	001 ?NC X0	001 1 A	130 LDI S&X	001 1 4
11C ->474F	020 32	0C6 198 F	36A ?A&C R-	120 ->4800	007 7 6	323 JNC \$-1C	11C ->4720

## 41 BLOCK

0	1	2	3	4	5	6	7
00C 12 L	2FC RCR 13	012 18 R	348 SETF 12	10D ?NC X0	0C8 SETF 10	130 LDI S&X	108 ->4291
00C 12 L	1E6 C=C+C S&X	00F 15 O	13D ?NC X0	104 ->4143	0F9 ?NC X0	087 135 6	341 ?NC X0
020 32	1E6 C=C+C S&X	012 18 R	124 ->494F	37B JNC \$-11	10C ->433E	36A ?A&C R-	104 ->41D0
014 20 T	2DC R= 13	120 288	10C ?FSET 8	18C ?FSET 11	04B JNC \$+09	360 ?NC RTN	245 ?NC X0
005 5 E	150 LD&R- 5	2DC R= 13	1C9 ?C GO	02F JC \$+05	3CC ?KEY	020 X0->GO	108 ->4291
013 19 S	11C R= 8	290 LD&R- A	103 ->4072	3CC ?KEY	340 ?NC RTN	225 ?NC GO	299 ?NC X0
014 20 T	1E6 C=C+C S&X	235 ?NC XQ	19D ?NC XQ	3A0 ?NC RTN	0E9 ?NC XQ	102 ->4089	108 ->42A6
013 19 S	013 JNC \$+02	118 ->468D	104 ->4167	10D ?NC GO	10C ->433A	351 ?NC XQ	3E1 ?NC XQ
020 32	022 B=0 ER	0F1 241 a	10D ?NC XQ	102 ->4077	01C R= 3	11C ->47D4	104 ->41F8
00F 15 O	3D4 R=R-1	0F2 242 r	104 ->4143	0F9 ?NC XQ	1E2 C=C+C ER	389 ?NC XQ	039 ?NC XQ
108 267 K	27E C=C-1 MS	0F3 243 s	001 ?NC XQ	10C ->433E	269 ?C GO	11C ->47EE	108 ->420E
201 ?NC GO	3D8 JNC \$-05	0F4 244 t	120 ->4800	1FD ?NC GO	12F ->4B9A	275 ?NC XQ	00D ?NC XQ
102 ->4080	081 ?NC XQ	0F5 245 u	100 ?NC XQ	102 ->407F	0D5 ?NC XQ	108 ->429D	108 ->4203
27D ?NC XQ	11C ->4720	1F6 502 v	104 ->4143	18C ?FSET 11	10C ->4335	279 ?NC XQ	065 ?NC XQ
108 ->429F	005 5 E	201 ?NC GO	195 ?NC XQ	033 JNC \$+06	104 CLRF 8	104 ->419E	108 ->4219
398 C=ST X	012 18 R	102 ->4080	110 ->4465	184 CLRF 11	31C R= 1	245 ?NC XQ	309 ?NC XQ

## 41 BLOCK

8	9	A	B	C	D	E	F
118 ->46C2	12C ->4B75	092 146 R	0A8 WRIT 2(Y)	2A8 WRIT 10(+)	0AE A<>C ALL	266 C=C-1 S&X	266 C=C-1 S&X
18C ?FSET 11	13D ?NC XQ	049 73 I	226 C=C+1 S&X	226 C=C+1 S&X	10E A=C ALL	268 WRIT 9(0)	068 WRIT 1(Z)
04F JC \$+09	11C ->474F	024 36 O	0E8 WRIT 3(X)	2E8 WRIT 11(a)	130 LDI S&X	266 C=C-1 S&X	266 C=C-1 S&X
140 ?NC XQ	34C ?FSET 12	092 146 R	226 C=C+1 S&X	226 C=C+1 S&X	1FF 511 8	228 WRIT 8(P)	270 RAM SLCT
11C ->4753	360 ?C RTN	049 73 I	128 WRIT 4(L)	328 WRIT 12(b)	270 RAM SLCT	266 C=C-1 S&X	2F0 WRITE DATA
328 WRIT 12(b)	3CC ?KEY	124 292 S	226 C=C+1 S&X	226 C=C+1 S&X	2F0 WRITE DATA	1EB WRIT 7(0)	266 C=C-1 S&X
389 ?NC XQ	1DD ?C GO	1BC RCR 11	168 WRIT 5(M)	368 WRIT 13(c)	266 C=C-1 S&X	266 C=C-1 S&X	2F3 JNC \$-22
11C ->47EE	103 ->4077	130 LDI S&X	226 C=C+1 S&X	226 C=C+1 S&X	348 WRIT 14(d)	1A8 WRIT 6(N)	3E0 RTN
241 ?NC XQ	18C ?FSET 11	200 512 O	1A8 WRIT 6(N)	3A8 WRIT 14(d)	266 C=C-1 S&X	266 C=C-1 S&X	046 C=0 S&X
11C ->4790	01F JC \$+03	10E A=C ALL	226 C=C+1 S&X	226 C=C+1 S&X	348 WRIT 13(c)	168 WRIT 5(M)	0D9 ?NC XQ
03B JNC \$+07	2C2 ?FSET 13	046 C=0 S&X	1E9 WRIT 7(0)	270 RAM SLCT	266 C=C-1 S&X	266 C=C-1 S&X	108 ->4236
3B9 ?NC XQ	267 JC \$-34	270 RAM SLCT	226 C=C+1 S&X	2F0 WRITE DATA	328 WRIT 12(b)	128 WRIT 4(L)	130 LDI S&X
11C ->47EE	201 ?NC GO	2F0 WRITE DATA	228 WRIT 8(P)	226 C=C+1 S&X	266 C=C-1 S&X	266 C=C-1 S&X	0C0 192 0
0E8 WRIT 3(X)	102 ->4080	226 C=C+1 S&X	226 C=C+1 S&X	366 ?A&C S&X	2E8 WRIT 11(a)	0E8 WRIT 3(X)	0D9 ?NC XQ
308 SETF 1	205 ?NC XQ	068 WRIT 1(Z)	268 WRIT 9(Q)	2EF JC \$-23	266 C=C-1 S&X	266 C=C-1 S&X	108 ->4236
1D5 ?NC XQ	118 ->4681	226 C=C+1 S&X	226 C=C+1 S&X	3E0 RTN	2A8 WRIT 10(+)	0A8 WRIT 2(Y)	31C R= 1

## 42 BLOCK

0	1	2	3	4	5	6	7
222 C=C+1 ER 108 ->4261	31C R= 1	31C R= 1	222 C=C+1 ER 3B3 JNC \$-0A	39C R= 0	10A ->42B3	36E ?ABC ALL	
3E3 JNC \$-04	130 LDI S\$X	222 C=C+1 ER 3B3 JNC \$-0C	0D3 JNC \$+1A	106 A=C S\$X	39C R= 0	03F JC \$+07	
3E0 RTN 0C0 192 e	3E3 JNC \$-04	3A3 JNC \$-0C	038 READ O(T)	270 RAM SLCT	39C R= 0	0F0 C<N ALL	
046 C=0 S\$X 185 ?NC X0	3E0 RTN 185 ?NC X0	1B0 PDP ADR 39C R= 0	038 READ O(T)	270 RAM SLCT	39C R= 0	03F JC \$+07	
10D ?NC X0 108 ->4261	130 LDI S\$X	23A C=C+1 M 270 RAM SLCT	057 JC \$+0A	106 A=C S\$X	39C R= 0	03F JC \$+07	
108 ->4243 31C R= 1	1C0 448 e	1E0 GOTO ADR 0F0 C<N ALL	057 JC \$+0A	106 A=C S\$X	39C R= 0	03F JC \$+07	
130 LDI S\$X 222 C=C+1 ER	106 A=C S\$X	39C R= 0 2F0 WRITE DATA	057 JC \$+0A	106 A=C S\$X	39C R= 0	03F JC \$+07	
0C0 192 e	3E3 JNC \$-04	1B0 PDP ADR 2F0 WRITE DATA	057 JC \$+0A	106 A=C S\$X	39C R= 0	03F JC \$+07	
10D ?NC X0 3E0 RTN	330 FETCH S\$X	1D8 C<N ALL 222 C=C+1 ER	057 JC \$+0A	106 A=C S\$X	39C R= 0	03F JC \$+07	
108 ->4243 046 C=0 S\$X	170 PUSH ADR 2F0 WRITE DATA	1D8 C<N ALL 3F8 READ 15(e)	057 JC \$+0A	106 A=C S\$X	39C R= 0	03F JC \$+07	
31C R= 1 1F1 ?NC X0	3DA RSHFC M	1D8 C<N ALL 1D8 C<N ALL	057 JC \$+0A	106 A=C S\$X	39C R= 0	03F JC \$+07	
222 C=C+1 ER 108 ->427C	3DA RSHFC M	222 C=C+1 ER 02F WRITE DATA	057 JC \$+0A	106 A=C S\$X	39C R= 0	03F JC \$+07	
3E3 JNC \$-04 130 LDI S\$X	3DA RSHFC M	270 RAM SLCT 042 C=0 ER	057 JC \$+0A	106 A=C S\$X	39C R= 0	03F JC \$+07	
3E0 RTN 0C0 192 e	1BC RCR 11	0F0 C<N ALL 10C ?FSET 8	057 JC \$+0A	106 A=C S\$X	39C R= 0	03F JC \$+07	
046 C=0 S\$X 1F1 ?NC X0	0A6 A>C S\$X	2F0 WRITE DATA 3B3 JNC \$-0A	057 JC \$+0A	106 A=C S\$X	39C R= 0	03F JC \$+07	
185 ?NC X0 108 ->427C	1E0 GOTO ADR 0F0 C<N ALL	3B3 JNC \$-0A 2CD ?NC GO	057 JC \$+0A	106 A=C S\$X	39C R= 0	03F JC \$+07	

## 42 BLOCK

B	9	A	B	C	D	E	F
0AE A>C ALL 263 JNC \$-34	3D0 LDER- F	1EE C=C+C ALL	1C2 A=A-C ER	331 ?NC X0	0AE C=0 ALL	11C ->4790	
0F0 C<N ALL 046 C=0 S\$X	214 R= 2	070 N=C ALL	0A2 A>C ER	11C ->47CC	130 LDI S\$X	13D ?NC X0	
36E ?ABC ALL 141 ?NC X0	3F3 JNC \$-02	3E0 RTN 21C R= 2	21C R= 2	151 ?NC X0	045 101 e	11C ->474F	
3AF JC \$-0R 108 ->4250	0FA C>B M	0A6 A>C S\$X	2FC RCR 13	10C ->4354	385 ?NC X0	34C ?FSET 12	
0F0 C<N ALL 130 LDI S\$X	04E C=0 ALL	188 SETF 11	3DC R=R+1	050 ?NC X0	11C ->47E1	360 ?C RTN	
222 C=C+1 ER 0C0 192 e	3E0 RTN 10C ?FSET 8	276 C=C-1 XS	10C ->4317	358 ST=C X	2CC ?FSET 13		
270 RAM SLCT 141 ?NC X0	205 ?NC X0	0BF JC \$+17	3F3 JNC \$-02	095 ?NC X0	27C RCR 9	2D7 JC \$-26	
106 A=C S\$X 108 ->4250	118 ->4681	39C R= 0 022 B=0 ER	24C ?FSET 9	29C R= 7	201 ?NC GO		
038 READ O(T) 31C R= 1	055 85 U	042 C=0 ER 33C RCR 1	2E2 ?C#0 ER	2E2 ?C#0 ER	102 ->4080		
0AE A>C ALL 222 C=C+1 ER	055 85 U	058 G=C BR,+ 39C R= 0	330 FETCH S\$X	36B JNC \$-13	34C ?FSET 12		
108 C<N ALL 2EA ?C#0 R-<	055 85 U	31C R= 1 098 C=G BR,+ 39C R= 0	14D ?NC X0	023 JNC \$+04	179 ?NC X0		
36E ?ABC ALL 3DF JC \$-05	055 85 U	2E2 ?C#0 ER 171 ?NC GO	21A C=C+A M	11C ->4753	328 WRIT 12(b)		
357 JC \$-16 3E0 RTN	055 85 U	033 JNC \$+06	10A ->425C	36A ?ABC R-<	10C ->435E		
118 C<M ALL 04E C=0 ALL	055 85 U	102 A=C ER 130 LDI S\$X	0E7 JC \$+1C	151 ?NC X0	033 JNC \$+06		
222 C=C+1 ER 3F0 PRPH SLCT	155 341 U	2D0 LDER- B 1F0 496 P	398 C=ST X	10C ->4354	2ED ?NC XQ		
373 JNC \$-12 ODC R= 10	158 H=C ALL	31C R= 1 3E3 JNC \$-04	158 H=C ALL	241 ?NC X0	118 ->468B		

## 43 BLOCK

0	1	2	3	4	5	6	7
328 WRIT 12(b) 11C ->474F	23C RCR 2	013 JNC \$+02	266 C=C-1 S\$X	340 ?NC RTN	004 4 D	002 2 B	
151 ?NC X0 2CC ?FSET 13	130 LDI S\$X	248 SETF 9	3FB JNC \$-01	130 LDI S\$X	00F 15 D	0C5 197 E	
10C ->4354 017 JC \$+02	043 67 C	288 SETF 7	3CB CLRKEY	018 24 X	015 21 U	003 3 C	
0C8 SETF 10 34C ?FSET 12	07C RCR 4	23C RCR 2	3CC ?KEY	3E0 RTN	002 2 B	0C4 196 D	
008 SETF 3 141 ?NC GO	3E0 RTN	3E0 RTN 3F7 JC \$-02	3F7 JC \$-02	09D ?NC X0	00C 12 L	004 4 D	
095 ?NC XQ 102 ->4050	284 CLRF 7	104 CLRF 8	130 LDI S\$X	11C ->4727	005 5 E	010 16 Q	
10C ->4325 3E0 RTN	244 CLRF 9	3CC ?KEY	008 8 H	004 4 D	020 32 Q	011 17 Q	
131 ?NC X0 04E C=0 ALL	0D5 ?NC X0	01F JC \$+03	3CB CLRKEY	012 18 R	005 5 E	030 48 Q	
10C ->434C 058 G=C BR,+ 10C ->4335	10C ->4335	108 SETF 8	3CC ?KEY	001 1 A	00E 14 N	012 18 R	
36A ?ABC R-< 3C8 CLRKEY	03C RCR 3	3EB JNC \$-03	266 C=C-1 S\$X	00F 15 D	014 20 T	070 112 P	
3CF JC \$-07 3CC ?KEY	39C R= 0	220 C=KEY KY	3EB JNC \$-03	002 2 B	005 5 E	013 19 S	
101 ?NC XQ 01A A=0 M	0DB C>G BR,+ 03C RCR 3	3E0 RTN 019 25 Y	002 2 B	019 25 Y	112 274 R	080 128 S	
11C ->4740 17A A=A+1 M	31C R= 1	106 A=C S\$X 31C R= 1	10B 267 K	10B 267 K	3E0 RTN	014 20 T	
24C ?FSET 9 17A A=A+1 M	36A ?ABC R-< 1BC RCR 11	36A ?ABC R-< 130 LDI S\$X	3E0 RTN 018 24 X	018 24 X	0C0 192 Q		
3AB JNC \$-0B 130 LDI S\$X	02F JC \$+05	130 LDI S\$X 087 135 G	3E0 RTN 001 1 A	001 1 A	015 21 U		
13D ?NC XQ 06D 109	10C ?FSET 8	07E 126 "	36A ?ABC R-< 11C ->4720	0C6 198 F	011 17 Q		

## 43 BLOCK

B	9	A	B	C	D	E	F
021 33 1 034 52 4	053 83 S	073 115 S	004 4 D	28C ?FSET 7	3DB JNC \$-05	328 WRIT 12(b)	
031 49 1 0C2 194 B	084 132 D	086 134 F	00F 15 D	053 JNC \$+0A	2C9 ?NC XQ	11D ?NC XQ	
022 34 1 035 53 S	054 84 T	074 116 t	003 3 C	179 ?NC XQ	118 ->46B2	11C ->4747	
071 113 0 013 19 S	015 21 U	017 23 W	019 25 Y	10C ->435E	083 JNC \$+10	079 ?NC XQ	
023 35 1 041 65 A	061 97 a	081 129 A	005 5 E	0FB JNC \$+1F	23A C=C+1 M	10C ->431E	
081 129 A 073 115 S	035 53 5	037 55 7	10B 267 K	131 ?NC XQ	158 H=C ALL	29B JNC \$-2D	
024 36 1 042 66 B	062 98 b	082 130 B	05D ?NC XQ	10C ->434C	11D ?NC XQ	000 NOP	
001 193 A 083 131 C	075 117 u	077 119 w	10C ->4317	36A ?ABC R-<	198 C=M ALL	000 NOP	
025 37 Z 043 67 C	063 99 c	083 131 C	130 LDI S\$X	141 ?NC XQ	11C ->4747	000 NOP	
012 18 R 0C3 195 C	085 133 E	187 391 G	027 39	102 ->4050	330 FETCH S\$X	000 NOP	
031 49 1 044 68 D	064 100 d	084 132 D	249 ?NC XQ	063 JNC \$+0C	106 A=C S\$X	000 NOP	
032 50 2 014 20 T	016 22 V	331 ?NC XQ	11C ->4792	038 JNC \$+07	330 FETCH S\$X	000 NOP	
032 50 2 051 81 Q	071 113 a	11C ->47CC	095 ?NC XQ	36A ?ABC R-<	31C R= 1	000 NOP	
072 114 r 034 52 4	036 54 6	090 ?NC XQ	10C ->4325	0D0 LDER- 3	106 A=C S\$X	000 NOP	
033 51 3 052 82 R	072 114 r	11C ->4727	24C ?FSET 9	21A C=C+A M	386 RSHFA S\$X	000 NOP	
082 130 R 074 116 t	076 118 v	005 5 E	037 JC \$+06	2F6 ?C#0 XS	0A2 A>C ER	000 NOP	

## 44 BLOCK

0	1	2	3	4	5	6	7
331 ?NC XQ	250 LD8R- 9	118 ->46C2	000 NOP	140 ?NC XQ	113 ->4400	00C 12	L 1AF JC #+35
11C ->47C	299 ?NC XQ	18C ?FSET 11	020 XD->80	11C ->4753	201 ?NC BD	00F 15	226 C=C+1 S&X
169 ?NC XQ	108 ->42A6	18F JC #+31	020 XD->80	328 WRIT 12(b)	102 ->4080	013 19	19F JC #+33
11C ->475A	091 ?NC XQ	2CC ?FSET 13	2C9 ?NC XQ	169 ?NC XQ	2ED ?NC XQ	114 276	226 C=C+1 S&X
275 ?NC XQ	108 ->4224	0E7 JC #+1C	118 ->46B2	11C ->475A	118 ->46BB	30B JNC #+1F	18B JNC #+31
108 ->429D	236 C=C+1 XS	15C R= 6	083 JNC #+10	241 ?NC XQ	36B JNC #+13	2E0 DSPOFF	226 C=C+1 S&X
108 SETF 8	091 ?NC XQ	110 LD8R- 4	108 SETF 8	11C ->4790	081 ?NC XQ	130 LDI S&X	17F JC #+2F
279 ?NC XQ	108 ->4224	050 LD8R- 1	299 ?NC XQ	13D ?NC XQ	11C ->4720	001 1 A	266 C=C-1 S&X
104 ->419E	261 ?C XQ	350 LD8R- D	108 ->42A6	11C ->474F	00D 13 M	1EF JC #+3D	266 C=C-1 S&X
091 ?NC XQ	091 ->2498	290 LD8R- A	091 ?NC XQ	3CC ?KEY	005 5 E	266 C=C-1 S&X	1F1 ?C GO
108 ->4224	108 SETF 8	170 PUSH ADR	108 ->4224	1DD ?C GO	00D 13 M	1DF JC #+3B	113 ->447C
250 LD8R- 9	243 JNC #+38	245 ?NC XQ	27C RCR 9	103 ->4077	00F 15 O	266 C=C-1 S&X	153 JNC #+2A
341 ?NC XQ	091 ?NC XQ	12C ->4B91	309 ?NC XQ	18C ?FSET 11	012 18 R	017 JC #+02	295 ?C GO
104 ->41D0	108 ->4224	170 PUSH ADR	118 ->46C2	027 JC #+04	019 25 Y	1C3 JNC #+38	113 ->4445
091 ?NC XQ	27C RCR 9	03C RCR 3	18C ?FSET 11	2CC ?FSET 13	020 32	1BF JC #+37	205 ?NC GO
108 ->4224	309 ?NC XQ	060 POWOFF	0BF JC #+17	001 ?C GO	020 32	266 C=C-1 S&X	112 ->4481

## 44 BLOCK

8	9	A	B	C	D	E	F
12B JNC #+25	07B JNC #+0F	02B JNC #+05	306 ?A+C S&X	2EE ?C#0 ALL	002 2 B	266 C=C-1 S&X	130 LDI S&X
226 C=C+1 S&X	261 ?NC XQ	130 LDI S&X	3A3 JNC #+0C	327 JC #+1C	0EE C>B ALL	266 C=C-1 S&X	16D 365
295 ?NC GO	110 ->4498	001 1 A	366 ?A+C S&X	306 ?A+C S&X	266 C=C-1 S&X	266 C=C-1 S&X	10E A=C ALL
112 ->4445	266 C=C-1 S&X	106 A=C S&X	393 JNC #+0E	317 JC #+1E	266 C=C-1 S&X	003 JNC #+00	0E0 SLCT Q
055 ?C XQ	360 ?NC RTN	346 ?A+B S&X	130 LDI S&X	366 ?A+C S&X	28B JNC #+2F	130 LDI S&X	39C R= 0
101 ->4015	130 LDI S&X	295 ?NC XQ	002 2 B	303 JNC #+20	326 ?A+B S&X	086 134 F	0AO SLCT P
266 C=C-1 S&X	000 0 R	110 ->44A5	046 A>C S&X	0AE A>C ALL	27B JNC #+31	23C RCR 2	04E C=0 ALL
3C5 ?C XQ	360 ?NC RTN	366 ?A+C S&X	266 C=C-1 S&X	346 ?A#0 S&X	10E A=C ALL	130 LDI S&X	01C R= 3
115 ->45F1	271 ?NC XQ	3EF JC #+03	266 C=C-1 S&X	2EF JC #+23	326 ?A+B S&X	04C 76 L	120 ??P=Q
001 ?NC XQ	110 ->449C	2E6 ?C#0 S&X	363 JNC #+14	166 A=A+1 S&X	267 JC #+34	27C RCR 9	187 JC #+30
000 ->0000	226 C=C+1 S&X	3DB JNC #+05	046 A>C S&X	08E B=A ALL	166 A=A+1 S&X	330 FETCH S&X	3D4 R=R-1
266 C=C-1 S&X	3E0 RTN	306 ?A+C S&X	266 C=C-1 S&X	326 ?A+B S&X	253 JNC #+36	266 C=C-1 S&X	050 LD8R- 1
055 ?NC XQ	180 POP ADR	3CF JC #+07	266 C=C-1 S&X	2CF JC #+27	0CE C=B ALL	266 C=C-1 S&X	190 LD8R- 6
100 ->4015	1E0 GOTO ADR	04E C=0 ALL	266 C=C-1 S&X	2C6 ?B#0 S&X	08E B=A ALL	003 JNC #+00	350 LD8R- D
245 ?NC XQ	03B JNC #+07	266 C=C-1 S&X	33B JNC #+19	2BB JNC #+29	2C6 ?B#0 S&X	04E C=0 ALL	050 LD8R- 1
110 ->4491	266 C=C-1 S&X	3B3 JNC #+0A	04E C=0 ALL	130 LDI S&X	237 JC #+3A	040 SLCT P	366 ?A+C S&X

## 45 BLOCK

0	1	2	3	4	5	6	7
14F JC #+29	08E B=A ALL	12C ->4B80	098 C=G	0R,+ 1EE C=C+C ALL	02B JNC #+05	3AF JC #+0B	1EE C=C+C ALL
27E C=C-1 MS	3A6 RSHFB S&X	10E A=C ALL	13C RCR 8	0A7 JC #+14	25C R= 9	08E B=A ALL	323 JNC #+1C
27E C=C-1 MS	0C6 C=B S&X	08E B=A ALL	358 ST=C X	0EE C>B ALL	0AO SLCT P	205 ?NC XQ	3B0 C=C AND A
003 JNC #+00	266 C=C-1 S&X	1EE C=C+C ALL	06E A>B ALL	0EO SLCT Q	0DC R= 10	118 ->4681	3AE RSHFB ALL
394 ?R= 0	266 C=C-1 S&X	070 N=C ALL	198 C=M ALL	35C R= 12	212 C=C+A P-Q	09A 154 Z	18E A=A-B ALL
127 JC #+24	003 JNC #+00	0CE C=B ALL	1EE C=C+C ALL	13A A=A+B M	309 ?NC GO	0A4 164 \$	307 JC #+20
3DC R=R+1	106 A=C S&X	158 M=C ALL	36E ?A+C ALL	07B JNC #+0F	116 ->45C2	07A 122 Z	17C RCR 6
3DC R=R+1	07C RCR 4	080 C=N ALL	397 JC #+0E	14A A=A+C R-	25C R= 9	05A 90 Z	370 C=C OR A
394 ?R= 0	01C R= 3	36E ?A+C ALL	31C R= 1	06F JC #+0D	2B2 C=C-1 P-Q	05A 90 Z	25C R= 9
003 JNC #+00	112 A=C P-Q	003 JNC #+00	398 C=ST X	036 B=0 XS	3C4 ST=0	04C 76 L	20A C=C+A R<
120 ??P=Q	3FA LSHFA M	358 ST=C X	10A A=C R-<	18E A=A-B ALL	258 T=ST	15B 347 E	2DF JC #+25
003 JNC #+00	2FC RCR 13	258 T=ST	12A A=A+B R-<	053 JNC #+0A	398 C=ST X	06E A>B ALL	18A A=A-B R<
23A C=C+1 M	3DE RSHFC MS	0EE C>B ALL	298 ST=T	19C R= 11	18A A=A-1 M	3AE ?A+C ALL	2CB JNC #+27
10E A=C ALL	372 ?A+C P-Q	11C R= 8	398 C=ST X	002 A=0 R	1CA A=A-C R-<	347 JC #+1B	15A A=A+C M
04E C=0 ALL	05F JC #+0B	058 G=C R+,+	36A ?A+C R-<	29E C=0-C MS	3BF JC #+09	08E B=A ALL	2BB JNC #+29
386 RSHFA S&X	2C1 ?NC XQ	04E C=0 ALL	357 JC #+16	252 C=A-C P-Q	1CE A:A-C ALL	2A0 SETDEC	07C RCR 4

## 45 BLOCK

8	9	A	B	C	D	E	F
1EE C=C+C ALL	036 54 6	10A A=C R<-	114 ->45B2	2E6 ?C#0 S&X	03C RCR 3	328 WRIT 12(b)	102 ->4080
2A7 JC #+2C	165 357 e	130 LDI S&X	3E0 RTN	0DB JNC #+1B	10A A=C R<-	328 WRIT 12(b)	1B0 POP ADR
18A A=A-B R-<	06E A>B ALL	0C5 197 E	2D5 ?NC XQ	260 SETHEX	130 LDI S&X	265 ?NC XQ	360 ?C RTN
297 JC #+2E	36E ?A+C ALL	36A ?A+C R-<	114 ->45B5	0F9 ?NC XQ	038 56 8	11C ->4799	23A C=C+1 M
2FC RCR 13	177 JC #+2E	0F7 JC #+1E	3E0 RTN	10C ->433E	36A ?A+C R-<	3C4 ST=0	170 PUSH ADR
1CE A=A-C ALL	358 ST=C X	006 A=0 S&X	2DD ?NC XQ	309 ?NC XQ	027 JC #+04	34C ?FSET 12	27A C=C-1 M
27B JNC #+31	20C ?FSET 2	3C4 ST=0	114 ->45B7	118 ->46C2	2E0 DSPOFF	360 ?C RTN	170 PUSH ADR
08E B=A ALL	003 JNC #+00	398 C=ST X	3E0 RTN	2C9 ?NC XQ	060 POWOFF	3CC ?KEY	020 X->60
260 SETHEX	28C ?FSET 7	36A ?A+C R-<	10A A=B=C=0	118 ->46B2	000 NOP	1DD ?C GO	226 C=C+1 S&X
205 ?NC XQ	14F JC #+29	0CF JC #+19	12E A=A+B ALL	31C R= 1	241 ?NC XQ	103 ->4077	360 ?C RTN
118 ->4681	288 SETF 7	34C ?FSET 12	14E A=A+C ALL	375 ?NC XQ	11C ->47D0	241 ?NC XQ	003 ?NC XQ \$+00
035 53 5	388 SETF 0	06F JC #+0D	34E ?A#0 ALL	11C ->47D0	37B JNC #+11	11C ->4790	331 ?NC XQ
077 119 w	084 CLR 5	2BD ?NC XQ	037 JC #+06	3C8 CLRKEY	309 ?NC XQ	20C ?FSET 13	11C ->47CC
0F0 240 P	304 CLR 1	114 ->45AF	15C R= 6	3CC ?KEY	118 ->46C2	195 ?C GO	09D ?NC XQ
0E7 231 S	31C R= 1	053 JNC #+0A	350 LD8R- D	05B JNC #+0B	14D ?NC XQ	113 ->4465	11C ->4727
071 113 G	398 C=ST X	2C9 ?NC XQ	330 FETCH S&X	220 C=KEY KY	11C ->4753	201 ?NC GO	014 20 T

## 46 BLOCK

	0	1	2	3	4	5	6	7
012	18	R	09C R= 5	08F JC \$+11	01B JNC \$+03	OAE A>C	ALL	05C R=
00F	15	R P	3D0 LDER- F	16C ?FI 6	022 B=0	BR 10E A=C	ALL	052 C=0
010	16	P	3D0 LDER- F	07B JNC \$+0F	188 SETF 11	022 B=0	BR	272 C=C-1
C20	32		3D0 LDER- F	2AC ?FI 7	05E C=0	MS 0E0 SLCT	0	P-Q 241 ?NC XQ
00F	15	O	01C R= 3	06B JNC \$+0D	3F0 PRPH	SLCT 31C R= 1	0	11C ->4790
109	265	I	3AC ?FI 0	12C ?FI 8	236 C=C+1	XS 130 LDI S&X	0	0C6 198 F
241	?NC XQ		0DB JNC \$+1B	05B JNC \$+0B	040 SLCT	P 140 320	0	0F1 241 F
11C	->4790		32C ?FI 1	26C ?FI 9	3DC R=R+1	20A C=C+1	R-	0F2 242 F
27D	?NC XQ		OCB JNC \$+19	04B JNC \$+09	10E A=C	ALL 373 JNC \$-12	0	0F3 243 F
108	->429F		0EC ?FI 2	0EC ?FI 10	270 RAM	SLCT 040 SLCT	P	1F4 500 F
04E C=0	ALL		0BB JNC \$+17	03F JC \$+07	2F0 WRITE	DATA 309 ?NC XQ	0	081 ?NC XQ
21C R=	13		02C ?FI 3	1AC ?FI 11	04E C=0	ALL 118 ->46C2	0	11C ->4720
3D0 LDER- F	04F JC \$+15		02F JC \$+05	038 READ O(T)	05E C=0	MS 013 19	S	006 6 F
3D0 LDER- F	06C ?FI 4		36C ?FI 12	36E ?ABC	ALL 23E C=C+1	MS 014 20	T	001 1 F
3D0 LDER- F	09F JC \$+13		01F JC \$+03	02B JNC \$+05	37E TABC	MS 012 18	R	009 9 F
3D0 LDER- F	04C ?FI 5		2EC ?FI 13	17E A=A+1	MS OFF JC \$+1F	00F 15	O	00C 12 F
						188 SETF 11		005 5 F
								104 260 D

## 46 BLOCK

	8	9	A	B	C	D	E	F
313	JNC \$-1E	330 FETCH S&X	23E C=C+1 MS	3F3 JNC \$-02	120 288	150 LDER- 5	266 C=C-1 S&X	080 ->2CF0
180 POP	ADR 2C2 ?B40	BR 013 JNC \$+02	3E0 RTN	3E0 RTN	150 LDER- 5	3FB JNC \$-01	265 ?NC XQ	
31C R= 1	02F JC \$+05	288 SETF 7	2E0 DSPOFF	130 LDI S&X	150 LDER- 5	3E0 RTN	020 ->0899	
3EE LSHFA ALL	368 WRIT 13(c)	23A C=C+1 M	320 DSPT06	010 16 P	150 LDER- 5	130 LDI S&X	3BD ?NC GO	
3EF LSHFA ALL	23E C=C+1 MS	1F6 C=C+1 XS	010 ?NC XQ	270 RAM SLCT	150 LDER- 5	094 148 T	01E ->07EF	
330 FETCH S&X	013 JNC \$+02	1F6 C=C+1 XS	118 ->46BB	130 LDI S&X	150 LDER- 5	3DB JNC \$-05	35D ?NC XQ	
10A A=C R-	288 SETF 7	1F6 C=C+1 XS	328 WRIT 12(b)	0FD 253 >	3E0 RTN	130 LDI S&X	118 ->46D7	
23A C=C+1 M	23A C=C+1 M	1F6 C=C+1 XS	328 WRIT 12(b)	3F0 PRPH SLCT	130 LDI S&X	110 272 P	028 WRIT O(T)	
2F6 ?C#0 XS	1F6 C=C+1 XS	33B JNC \$-19	265 ?NC XQ	2E0 DSPOFF	010 16 P	3C3 JNC \$-08	0A8 WRIT 2(Y)	
313 JNC \$-06	1F6 C=C+1 XS	170 PUSH ADR	11C ->4799	320 DSPT06	270 RAM SLCT	046 C=0 S&X	268 WRIT 9(Q)	
170 PUSH ADR	1F6 C=C+1 XS	28C ?FSET 7	3E0 RTN	3E0 RTN	130 LDI S&X	266 C=C-1 S&X	32C ?FI 1	
0AE A>C ALL	063 JNC \$+0C	360 ?C RTN	09D ?NC XQ	04E C=0 ALL	0FC 252 I	3AF JC \$-0B	3F7 JC \$-02	
3E0 RTN	330 FETCH S&X	130 LDI S&X	11C ->4727	2E6 C=C-1 ALL	3F0 PRPH SLCT	130 LDI S&X	328 WRIT 12(b)	
180 POP	ADR 2C2 ?B40	BR 020 32	004 4 D	39C R= 0	3E0 RTN	384 900 D	3E0 RTN	
21C R= 2	02F JC \$+05	368 WRIT 13(c)	001 1 A	150 LDER- 5	130 LDI S&X	393 JNC \$-0E	000 NOP	
3D0 R=R+1	368 WRIT 13(c)	23E C=C+1 MS	002 2 B	150 LDER- 5	030 48 0	3C1 ?NC XQ	000 NOP	

## 47 BLOCK

	0	1	2	3	4	5	6	7
000 NOP	341 ?NC XQ	180 POP ADR	2ED ?NC XQ	130 LDI S&X	104 CLRF 8	00B 13 M	13D ?NC XQ	
000 NOP	108 ->42D0	330 FETCH S&X	10C ->43BB	285 645 E	244 CLRF 9	005 5 E	124 ->494F	
000 NOP	341 ?NC XQ	368 WRIT 13(c)	2ED ?NC XQ	2E0 DSPOFF	3E0 RTN	10B 269 M	13D ?NC XQ	
000 NOP	108 ->42D0	23A C=C+1 M	10C ->43BB	266 C=C-1 S&X	09D ?NC XQ	3E0 RTN	124 ->494F	
000 NOP	OB9 ?NC XQ	2F6 ?C#0 XS	025 ?NC XQ	3FB JNC \$-01	11C ->4727	000 NOP	32D ?NC XQ	
000 NOP	12C ->4B2E	3E3 JNC \$-04	130 ->4C09	320 DSPT06	020 32	000 NOP	128 ->4ACB	
000 NOP	3DD ?NC XQ	1E0 GOTO ADR	000 NOP	3E0 RTN	008 11 K	000 NOP	195 ?NC XQ	
000 NOP	120 ->4F7	180 POP ADR	000 NOP	09D ?NC XQ	00F 15 0	000 NOP	110 ->4465	
000 NOP	OB0 ?NC XQ	330 FETCH S&X	141 ?NC GO	11C ->4727	120 288	000 NOP	141 ?NC GO	
000 NOP	124 ->492F	328 WRIT 12(b)	102 ->4050	020 32	3E0 RTN	000 NOP	102 ->4050	
000 NOP	3DD ?NC GO	23A C=C+1 M	0F1 ?NC GO	020 32	09D ?NC XQ	000 NOP	131 ?NC GO	
000 NOP	132 ->4CF7	2F6 ?C#0 XS	136 ->4D3C	020 32	11C ->4727	000 NOP	136 ->4D4C	
000 NOP	35D ?NC GO	3E3 JNC \$-04	141 ?NC GO	020 32	004 4 D	000 NOP	141 ?NC GO	
000 NOP	13E ->4FD7	1E0 GOTO ADR	102 ->4050	120 288	00F 15 D	000 NOP	102 ->4050	
000 NOP	21D ?NC GO	000 NOP	141 ?NC GO	3E0 RTN	00D 13 M	000 NOP	141 ?NC GO	
000 NOP	132 ->4C87	000 NOP	102 ->4050	284 CLRF 7	020 32	000 NOP	102 ->4050	

## 47 BLOCK

	8	9	A	B	C	D	E	F
19D ?NC XQ	130 LDI S&X	120 288	000 NOP	001 ?NC XQ	005 5 E	0AC 172 ,	020 32	
104 ->4167	2F1 753 a	3E0 RTN	000 NOP	120 ->4800	014 20 T	1BC RCR 11	013 19 S	
19D ?NC XQ	2BC RCR 7	000 NOP	001 ?NC XQ	120 288	130 LDI S&X	02F 47		
104 ->4167	2BC RCR 7	000 NOP	000 NOP	120 ->4800	3E0 RTN	OFF 255 8	004 4 D	
001 ?NC XQ	000 NOP	000 NOP	000 NOP	10D ?NC XQ	09D ?NC XQ	3C4 ST=0	020 32	
110 ->4400	000 NOP	000 NOP	000 NOP	120 ->4843	11C ->4727	258 T=ST	120 288	
3E0 ?NC XQ	266 C=C-1 S&X	000 NOP	000 NOP	109 ?NC XQ	020 32	358 ST=C X	3E0 RTN	
114 ->45FB	3DB JNC \$-05	000 NOP	000 NOP	120 ->4842	014 20 T	2D8 ST<T	000 NOP	
2F9 ?NC XQ	3E0 RTN	000 NOP	000 NOP	2A9 ?NC GO	013 19 S	27A C=C-1 M	000 NOP	
120 ->48BE	09D ?NC XQ	000 NOP	000 NOP	102 ->40AA	005 5 E	3F3 JNC \$-02	000 NOP	
21D ?NC GO	11C ->4727	000 NOP	000 NOP	2A9 ?NC GO	014 20 T	3C4 ST=0	000 NOP	
13E ->4F97	020 32	000 NOP	000 NOP	102 ->40AA	120 288	258 T=ST	000 NOP	
141 ?NC GO	015 21 U	000 NOP	000 NOP	09D ?NC XQ	3E0 RTN	198 C=M ALL	000 NOP	
102 ->4050	010 16 P	000 NOP	000 NOP	11C ->4727	158 M-C ALL	3E0 RTN	000 NOP	
141 ?NC GO	003 3 C	000 NOP	000 NOP	014 20 T	04E C=0 ALL	09D ?NC XQ	000 NOP	
102 ->4050	020 32	000 NOP	000 NOP	013 19 S	130 LDI S&X	11C ->4727	000 NOP	

## 48 BLOCK

0	1	2	3	4	5	6	7
351 ?NC XQ	040 64 P	060 SLCT P	360 ?C RTN	12C ->4B75	328 WRIT 12(b)	130 LDI S8X	2E6 ?C#0 S8X
11C ->47D4	2F0 WRITE DATA	17E A=A+1 MS	3CC ?KEY	363 JMC \$-14	09B ?NC XQ	020 32	027 JC \$+04
23D ?NC XQ	05A C=0 M	38B JNC \$-OF	1DD ?C GO	0C8 SETF 10	11C ->4727	2F0 WRITE DATA	0CC ?FSET 10
120 ->488F	261 ?NC XQ	04E C=0 ALL	103 ->4077	331 ?NC XQ	010 16 P	261 ?NC XQ	0CF JC \$+19
27D ?NC XQ	120 ->4898	2F0 WRITE DATA	18C ?FSET 11	11C ->47CC	101 257 A	120 ->4898	03B JNC \$+07
108 ->429F	158 M=C ALL	18C ?FSET 11	01F JC \$+03	09B ?NC XQ	04E C=0 ALL	18C ?FSET 11	13A A=A+B M
2DC R= 13	178 READ 5(M)	067 JC \$+14	2CC ?FSET 13	11C ->4727	15C R= 6	137 JC \$+26	130 LDI S8X
350 LD8R- D	33C RCR 1	14D ?NC XQ	24F JC \$-37	004 4 D	050 LD8R- 1	27A C=C-1 M	010 16 P
15C R= 6	1E6 C=C+C S8X	11C ->4753	201 ?NC GO	00F 15 O	21C R= 2	27A C=C-1 M	2F0 WRITE DATA
050 LD8R- 1	1E6 C=C+C S8X	328 WRIT 12(b)	102 ->4080	00D 13 M	110 LD8R- 4	330 FETCH S8X	261 ?NC XQ
21C R= 2	1E6 C=C+C S8X	328 WRIT 12(b)	23D ?NC XQ	120 288	10E A=C ALL	2F6 ?C80 XS	120 ->4898
110 LD8R- 4	2F0 WRITE DATA	23D ?NC XQ	120 ->488F	130 LDI S8X	08E B=A ALL	013 JNC \$+02	18C ?FSET 11
10E A=C ALL	198 C=M ALL	120 ->488F	0E8 WRIT 3(X)	031 49 1	15C R= 6	0C8 SETF 10	087 JC \$+10
086 B=A S8X	0E0 SLCT Q	241 ?NC XQ	208 SETF 2	0CC ?FSET 10	390 LD8R- E	23A C=C+1 M	14D ?NC XQ
01C R= 3	15C R= 6	11C ->4790	244 CLR 9	013 JNC \$+02	15A A=A+C M	23A C=C+1 M	11C ->4753
130 LDI S8X	162 A=A+1 PR	34C ?FSET 12	1D5 ?NC XQ	226 C=C+1 S8X	29C R= 7	330 FETCH S8X	138 READ 4(L)

## 48 BLOCK

8	9	A	B	C	D	E	F
241 ?NC XQ	11C ->4727	330 FETCH S8X	146 A=A+C S8X	3B5 ?NC XQ	27A C=C-1 M	103 ->4077	00F 15 O
11C ->4790	020 32	23A C=C+1 M	326 ?A80 S8X	120 ->48ED	081 ?NC XQ	18C ?FSET 11	00D 13 M
3CC ?KEY	00D 13 M	146 A=A+C S8X	01F JC \$+03	04E C=0 ALL	124 ->4920	01F JC \$+03	020 J2 V
1DD ?C GO	00F 15 O	326 ?A8B S8X	186 A=A-B S8X	15C R= 6	081 ?NC XQ	2CC ?FSET 13	016 22 R
103 ->4077	012 18 R	01F JC \$+03	166 A=A+1 S8X	050 LD8R- 1	11C ->4720	2D7 JC \$-26	012 18 R
18C ?FSET 11	020 32	186 A=A-B S8X	37A ?A8C M	21C R= 2	020 32	201 ?NC GO	113 275 S
027 JC \$+04	120 288	166 A=A+1 S8X	31F JC \$-1D	110 LD8R- 4	020 32	102 ->4080	3E0 RTN
2CC ?FSET 13	3E0 RTN	330 FETCH S8X	1A6 A=A-1 S8X	10E A=C ALL	020 32	2ED ?NC XQ	04E C=0 ALL
10D ?C GO	006 A=0 S8X	23A C=C+1 M	1A6 A=A-1 S8X	08E B=A ALL	00F 15 O	118 ->4688	15C R= 6
123 ->4843	330 FETCH S8X	146 A=A+C S8X	01F JC \$+03	15C R= 6	008 11 K	328 WRIT 12(b)	26A C=C-1 R-
201 ?NC GO	23A C=C+1 M	326 ?A8B S8X	022 B=0 PR	110 LD8R- 4	020 32	3B5 ?NC XQ	27A C=C-1 M
102 ->4080	146 A=A+C S8X	01F JC \$+03	188 SETF 11	15A A=A+C M	120 288	120 ->48ED	390 LD8R- E
2ED ?NC XQ	326 ?A8B S8X	186 A=A-B S8X	3DC R=R+1	261 ?NC XQ	241 ?NC XQ	383 JNC \$-10	330 FETCH S8X
118 ->4688	01F JC \$+03	166 A=A+1 S8X	3E0 RTN	120 ->4898	11C ->4790	09D ?NC XQ	2F6 ?C80 XS
38B JMC \$-OF	186 A=A-B S8X	330 FETCH S8X	331 ?NC XQ	18C ?FSET 11	3CC ?KEY	11C ->4727	013 JNC \$+02
09D ?NC XQ	166 A=A+1 S8X	23A C=C+1 M	11C ->47CC	0C7 JC \$+18	1DD ?C GO	004 4 D	108 SETF 8

## 49 BLOCK

0	1	2	3	4	5	6	7
23A C=C+1 M	030 48 O	0A1 ?NC XQ	120 ->488F	368 WRIT 13(c)	108 ->42A6	2B5 ?NC GO	2E0 DSPOFF
081 ?NC XQ	01B JNC \$+03	124 ->4928	0E8 WRIT 3(X)	15C R= 6	04E C=0 ALL	12A ->4AAD	18C ?FSET 11
124 ->4920	130 LDI S8X	130 LDI S8X	0E6 C>B S8X	222 C=C+1 PR	3F0 PRPH SLCT	0AE A>C ALL	077 JC \$+0E
130 LDI S8X	020 32	02D 45 -	130 LDI S8X	330 FETCH S8X	39C R= 0	222 C=C+1 PR	171 ?NC XQ
368 WRIT 13(c)	368 WRIT 13(c)	0A1 ?NC XQ	368 WRIT 13(c)	080 176 O	130 LDI S8X	3C3 JNC \$-08	130 ->4C5C
368 WRIT 13(c)	368 WRIT 13(c)	124 ->4928	04E C=0 ALL	368 WRIT 13(c)	010 16 P	2B9 ?NC XQ	2E0 DSPOFF
15C R= 6	368 WRIT 13(c)	3E0 RTN	09C R= 5	130 LDI S8X	270 RAM SLCT	12C ->4BAE	18C ?FSET 11
04E C=0 ALL	368 WRIT 13(c)	27A C=C-1 M	26A C=C-1 R-	222 C=C+1 PR	10E A=C ALL	04F JC \$+09	04F JC \$+09
3D0 LD8R- F	02B JNC \$+05	330 FETCH S8X	27A C=C-1 M	368 WRIT 13(c)	3E8 JNC \$-03	028 WRIT 0(T)	39C R= 0
330 FETCH S8X	046 C=0 S8X	368 WRIT 13(c)	330 FETCH S8X	222 C=C+1 PR	130 LDI S8X	048 WRIT 1(Z)	268 WRIT 9(0)
2E6 ?C80 S8X	26A C=C-1 R-	27A C=C-1 M	368 WRIT 13(c)	330 FETCH S8X	010 16 P	31C R= 1	042 C=0 S8X
077 JC \$+0E	081 ?C XQ	330 FETCH S8X	0C6 C=B S8X	368 WRIT 13(c)	10E A=C ALL	150 LD8R- 5	1E2 C=C+C PR
10C ?FSET 8	125 ->4920	368 WRIT 13(c)	368 WRIT 13(c)	201 ?NC GO	270 RAM SLCT	2F0 WRITE DATA	1E2 C=C+C PR
023 JNC \$+04	201 ?NC GO	3E0 RTN	130 LDI S8X	102 ->4080	038 READ 0(T)	171 ?NC XQ	1E2 C=C+C PR
130 LDI S8X	102 ->4080	23D ?NC XQ	0B1 177 1	299 ?NC XQ	36E ?A8C ALL	130 ->4C5C	1E2 C=C+C PR

## 49 BLOCK

8	9	A	B	C	D	E	F
069 ?NC GO	205 ?NC XQ	19C R= 11	10E A=C ALL	09C R= 5	069 ?C GO	04E C=0 ALL	157 JC \$+2A
12A ->4A1A	118 ->4681	30D ?NC XQ	266 C=C-1 S8X	050 LD8R- 1	12B ->4A1A	0F8 READ 3(X)	0AE A>C ALL
262 C=C-1 PR	01F 31 -	128 ->4AC3	348 WRIT 14(d)	3D0 LD8R- F	0AE A>C ALL	36A ?A8C R-	130 LDI S8X
1BB READ 6(N)	0F1 241 -	1A8 WRIT 6(N)	3B8 READ 14(d)	390 LD8R- E	266 C=C-1 S8X	1BF JC \$+37	067 103 S
1E2 C=C+C PR	0FF 255 1	1A8 WRIT 6(N)	21C R= 2	10E A=C ALL	10E A=C ALL	31C R= 1	10E A=C ALL
1E2 C=C+C PR	01F 31 -	04E C=0 ALL	30D ?NC XQ	19C R= 11	168 WRIT 5(M)	378 READ 13(c)	32B WRIT 12(b)
1E2 C=C+C PR	0F1 241 -	2F0 WRITE DATA	128 ->4AC3	04E C=0 ALL	168 WRIT 5(M)	36A ?A8C R-	1E8 WRIT 7(0)
1E2 C=C+C PR	1FF 511 1	138 READ 4(L)	39C R= 0	138 READ 4(L)	04E C=0 ALL	19F JC \$+33	22B WRIT 8(P)
3C7 JC \$-08	10E A=C ALL	30D ?NC XQ	278 READ 9(0)	30D ?NC XQ	0F8 READ 3(X)	04E C=0 ALL	226 C=C+1 S8X
19C R= 11	0CE C=B ALL	128 ->4AC3	1E2 C=C+C PR	128 ->4AC3	19C R= 11	39C R= 0	10E A=C ALL
0AE A>C ALL	380 C=C AND A	138 READ 4(L)	1E2 C=C+C PR	278 READ 9(0)	36A ?A8C R-	288 READ 10(+)	0E8 WRIT 3(X)
130 LDI S8X	08E B=A ALL	30D ?NC XQ	39C R= 0	1FF JC \$+33	362 ?A8C PR	0F8 READ 3(X)	130 LDI S8X
1FF 511 1	10E A=C ALL	128 ->4AC3	1E2 C=C+C PR	1E2 C=C+C PR	368 WRIT 13(c)	177 JC \$+2E	0E8 WRIT 3(X)
10E A=C ALL	138 READ 4(L)	3E8 WRIT 15(e)	21F JC \$-3D	1E2 C=C+C PR	2AB WRIT 10(+)	04E C=0 ALL	0F8 READ 3(X)
128 WRIT 4(L)	128 WRIT 4(L)	3F8 READ 15(e)	1B8 READ 6(N)	1E2 C=C+C PR	2E8 WRIT 11(a)	2F8 READ 11(a)	19C R= 11
08E B=A ALL	138 READ 4(L)	0AE A>C ALL	0AE A>C ALL	1E2 C=C+C PR	1A8 WRIT 6(N)	362 ?A8C PR	36A ?A8C R-

## 4A BLOCK

0	1	2	3	4	5	6	7
0D7 JC \$+1A 362 ?ABC ER	00D ?NC XQ	3B8 READ 14(d)	02F 47 /	09D ?NC XQ	375 ?NC XQ	0FA 250	Z
0E8 WRIT 3(X) 04F JC \$+09	108 ->4203	36E ?ABC ALL	016 22 V	11C ->4727	11C ->47DD	0FA 250	Z
129 WRIT 4(L) 3B8 READ 14(d)	080 C=N ALL	0D3 JNC \$+1A	009 9 I	016 22 V	241 ?NC XQ	0FA 250	Z
1A6 A=A-1 S&X 04E C=0 ALL	10E A=C ALL	046 C=0 S&X	012 18 R	012 18 R	11C ->4790	0FA 250	Z
31C R= 1 378 READ 13(c)	046 C=0 S&X	098 C=G ER,†	104 260 D	004 4 D	3CC ?KEY	1FA 506	Z
33B READ 12(b) 266 C=C-1 S&X	058 G=C PR,†	222 C=C†1 ER	375 ?NC XQ	020 32 P	3AB JNC 8-OR	0E8 WRIT 3(X)	
36A ?ABC RK- 31C R= 1	270 RAM SLCT	37B JNC \$-11	11C ->47DB	010 16 P	0C8 SETF 10	0E8 WRIT 3(X)	
09F JC \$+13 36A ?ABC R<-	038 READ 0(T)	309 ?NC XQ	241 ?NC XQ	013 19 S	388 SETF 0	33C RCR 1	
04E C=0 ALL 1AD ?NC GO	36E ?ABC ALL	118 ->46C2	11C ->4790	009 9 I	171 ?NC XQ	31C R= 1	
39C R= 0 12A ->4A6B	11B JNC \$+23	2ED ?NC XQ	3CC ?KEY	104 260 D	104 ->415C	3D0 LDR- F	
33B READ 9(P) 0F9 ?NC XQ	138 READ 4(L)	118 ->46BB	3DB JNC 8-05	375 ?NC XQ	183 JNC 8+36	2F0 WRITE DATA	
362 ?ABC PR 10C ->433E	34E ?ABC ALL	09D ?NC XQ	0DB JNC \$+1B	11C ->47DD	309 ?NC XQ	21C R= 2	
077 JC \$+0E 04E C=0 ALL	103 JNC \$+20	11C ->4727	309 ?NC XQ	130 LDI S&X	118 ->46C2	310 LDR- C	
04E C=0 ALL 2F0 WRITE DATA	238 READ 8(P)	015 21 U	118 ->46C2	0D7 215 W	205 ?NC XQ	250 LDR- 9	
0A8 WRIT 2(Y) 0A8 WRIT 2(Y)	34E ?ABC ALL	010 16 P	2ED ?NC XQ	249 ?NC XQ	118 ->4681	290 LDR- A	
1F8 READ 7(D) 3F0 PRPH SLCT	0EB JNC \$+1D	003 3 C	118 ->46BB	11C ->4792	0FA 250 z	0E6 C>B S&X	

## 4A BLOCK

8	9	A	B	C	D	E	F
0C6 C=B S&X 150 LDR- 5	34C ?FSET 12	118 ->46C2	JEB JNC 8-03	04E C=0 ALL	023 35 \$	0C6 C=B S&X	
045 ?NC XQ 11E A=C MS	360 ?C RTN	2ED ?NC XQ	199 ?NC GO	2DC R= 13	045 69 E	045 ?NC XQ	
12C ->4B11 130 LDI S&X	18C ?FSET 11	118 ->46BB	12A ->4A66	110 LDR- 4	167 359 \$	12C ->4B11	
04E C=0 ALL 326 B06 1	201 ?C GO	09D ?NC XQ	06E A>B ALL	0FE C>B MS	028 WRIT 0(T)	31C R= 1	
2F0 WRITE DATA 045 ?NC XQ	103 ->4080	11C ->4727	3B0 C=C AND A	21C R= 2	04E C=0 ALL	010 LDR- 0	
205 ?NC XQ 12C ->4B11	10C ?FSET 8	013 19 S	06E A>B ALL	200 LDR- B	068 WRIT 1(Z)	050 LDR- 1	
118 ->4681 1BE A=A-1 MS	1C9 ?C GO	02F 47 /	36A ?ABC RK-	01D ?NC XQ	130 LDI S&X	268 WRIT 9(Q)	
093 147 S 01F JC \$+03	103 ->4072	004 4 D	3A0 ?NC RTN	12C ->4B07	303 771 C	276 C=C-1 XS	
320 32 3B8 READ 14(d)	2CC ?FSET 13	020 32	020 X0->GO	080 C=N ALL	228 WRIT 8(P)	3F3 JNC 8-02	
020 32 3C8 JNC \$-07	13D ?C GO	005 5 E	069 ?NC GO	236 C=C†1 XS	276 C=C-1 XS	130 LDI S&X	
020 32 04E C=0 ALL	127 ->494F	00D 13 H	12A ->4A1A	3E3 JNC 8-04	3F3 JNC 8-02	008 8 H	
020 32 028 WRIT 0(T)	141 ?NC GO	00F 15 O	21C R= 2	205 ?NC XQ	29C R= 7	01D ?NC XQ	
120 298 068 WRIT 1(Z)	102 ->4050	113 275 S	310 LDR- C	118 ->4681	050 LDR- 1	12C ->4B07	
0E8 WRIT 3(X) 0C6 C=B S&X	375 ?NC XQ	250 LDR- 9	0CD 205 *	2D4 ?R= 13	04E C=0 ALL		
0E8 WRIT 3(X) 045 ?NC XQ	10C ->433E	11C ->47DD	290 LDR- A	0EF 239 o	3F3 JNC 8-02	0A8 WRIT 2(Y)	
21C R= 13 12C ->4B11	309 ?NC XQ	3CC ?KEY	0E6 C>B S&X	001 1 A	0A8 WRIT 2(Y)	10C ?FSET 8	

## 4B BLOCK

0	1	2	3	4	5	6	7
1C9 ?C GO	3E0 RTN	06F JC \$+0D	291 ?NC XQ	060 POWOFF	118 ->46C2	103 ->4077	00D 13 H
10J ->4072 0A6 A>C S&X	03C RCR 3	12C ->4BA4	000 NOP	18C ?FSET 11	18C ?FSET 11	120 288	
2C0 ?FSET 13 130 LDI S&X	36A ?ABC R<-	046 C=0 S&X	020 X0->GO	0AF JC \$+15	01F JC \$+03	2DC R= 13	
32D ?C GO 087 135 G	02B JNC \$+05	3F0 PRPH SLCT	2C9 ?NC XQ	14D ?NC XQ	2CC ?FSET 13	350 LDR- D	
12P ->4ACB 0A6 A>C S&X	158 M=C ALL	299 ?NC XQ	118 ->46B2	11C ->4753	257 JC 8-36	01B JNC 8+03	
141 ?NC GO 31C R= 1	108 SETF 8	108 ->42A6	188 SETF 11	328 WRIT 12(b)	201 ?NC GO	2DC R= 13	
102 ->4050 3C8 ?KEY	3C8 CLRKEY	00D ?NC XQ	048 SETF 4	291 ?NC XQ	102 ->4080	310 LDR- C	
01E C=R MS 0A3 JNC \$+14	01B JNC \$+03	108 ->4203	08B JNC \$+11	12C ->4B44	1AD ?NC XQ	235 ?NC XQ	
368 WRIT 13(c) 220 C=KEY KY	0F9 ?NC XQ	309 ?NC XQ	320 DSPTOG	241 ?NC XQ	12C ->4B6B	118 ->468D	
226 C=C†1 S&X 266 C=C-1 S&X	10C ->433E	118 ->46C2	275 ?NC XQ	11C ->4790	048 SETF 4	0F0 240 P	
23E C=C†1 MS 09F JC \$+13	18C RCR 11	251 ?NC XQ	108 ->429D	13D ?NC XQ	373 JNC 8-12	0F1 241 Q	
3E8 JNC 8-03 266 C=C-1 S&X	266 C=C-1 S&X	12C ->4B94	299 ?NC XQ	11C ->474F	248 SETF 9	0F2 242 R	
070 N=C ALL 08F JC \$+11	353 JNC 8-16	170 PUSH ADR	108 ->42A6	34C ?FSET 12	081 ?NC XQ	0F3 243 S	
0C6 C=B S&X 266 C=C-1 S&X	3E0 RTN	03C RCR 3	065 ?NC XQ	360 ?C RTN	11C ->4720	0F4 244 T	
045 ?NC XQ 07F JC \$+0F	331 ?NC XQ	0F9 ?NC XQ	108 ->4219	3CC ?KEY	00D 13 H	0C3 195 C	
12C ->4B11 266 C=C-1 S&X	11C ->47CC	309 ?NC XQ	10C ->433E	10D ?C GO	005 5 E	1C4 452 D	

## 4B BLOCK

8	9	A	B	C	D	E	F
24C ?FSET 9 3E0 RTN	309 ?NC XQ	205 ?NC XQ	00F 15 0	000 NOP	000 NOP	000 NOP	
047 JC \$+08 309 ?NC XQ	114 ->45C2	118 ->4681	014 20 T	000 NOP	000 NOP	000 NOP	
081 ?NC XQ 118 ->46C2	18D ?NC GO	0A5 165 Z	005 5 E	000 NOP	000 NOP	000 NOP	
11C ->4720 2E0 DSFOFF	102 ->4063	0A5 165 Z	003 3 C	000 NOP	000 NOP	000 NOP	
020 32 01C R= 3	09D ?NC XQ	0A5 165 Z	014 20 T	000 NOP	000 NOP	000 NOP	
002 2 B 110 LDR- 4	11C ->4727	045 165 Z	005 5 E	000 NOP	000 NOP	000 NOP	
001 1 A 130 LDI S&X	019 25 Y	0A5 165 Z	204 516 D	000 NOP	000 NOP	000 NOP	
104 260 D 1AA 426 *	002 2 B	0A5 165 Z	3DD ?NC XQ	000 NOP	000 NOP	000 NOP	
3E0 RTN 18C RCR 11	004 4 D	1A5 421 Z	0AC ->2BF7	000 NOP	000 NOP	000 NOP	
081 ?NC XQ 3E0 RTN	00E 14 N	3E0 RTN	149 ?NC XQ	000 NOP	000 NOP	000 NOP	
11C ->4720 309 ?NC XQ	001 1 A	18C ?FSET 11	024 ->0952	000 NOP	000 NOP	000 NOP	
020 32 118 ->46C2	014 20 T	3A0 ?NC RTN	360 ?NC XQ	000 NOP	000 NOP	000 NOP	
00C 12 L 2E0 DSPOFF	113 275 S	38D ?NC XQ	058 ->16DB	000 NOP	000 NOP	000 NOP	
00F 15 D 020 X0->GO	3E0 RTN	118 ->46EF	3A5 ?NC GO	000 NOP	000 NOP	000 NOP	
013 19 S 060 POWOFF	309 ?NC XQ	010 16 P	11A ->46E9	000 NOP	000 NOP	000 NOP	
114 276 T 000 NOP	118 ->46C2	012 18 R	000 NOP	000 NOP	000 NOP	000 NOP	

4C BLOCK

0	1	2	3	4	5	6	7
09D ?NC XQ	JF0 PRPH SLCT	010 LDRR- 0	088 SETF 5	18C ?FSET 11	103 ->4050	038 READ	0(T) 1E2 C=C+C \$R
11C ->4727	299 ?NC XQ	2D0 LDRR- B	04E C=0 ALL	0BF JC *+17	18C ?FSET 11	19C R= 11	03B JMC \$+07
020 32 P	108 ->42A6	170 PUSH ADR	0A8 WRIT 2(Y)	14D ?NC XQ	027 JC \$+04	36A ?ANC RC- JD4 R=R-1	
010 16 E	00D ?NC XQ	245 ?NC XQ	2F0 WRITE DATA	11C ->4753	2CC ?FSET 13	OFF JC *+1F	1E2 C=C+C ef
005 5 E	108 ->4203	12C ->4B91	0A3 JMC *+14	32B WRIT 12(b)	025 ?C GD	04E C=0 ALL	1E2 C=C+C \$R
005 5 E	2B9 ?NC XQ	170 PUSH ADR	275 ?NC XQ	32B WRIT 12(b)	133 ->4C09	078 READ 1(Z)	1E2 C=C+C \$R
00C 12 L S	12C ->4BAE	03C RCR 3	108 ->429D	001 ?NC XQ	201 ?NC GD	36A ?ANC RC- 1E2 C=C+C \$R	
113 275 S	028 WRIT 0(T)	0F9 ?NC XQ	299 ?NC XQ	130 ->4C00	102 ->4080	0DF JC *+1B	3AB JMC \$-0B
3E0 RTN	068 WRIT 1(Z)	10C ->433E	108 ->42A6	241 ?NC XQ	1AD ?NC XQ	04E C=0 ALL	2D4 ?R= 13
351 ?NC XQ	0A8 WRIT 2(Y)	060 POWOFF	065 ?NC XQ	11C ->4790	12C ->4B6B	088 READ 2(Y)	04B JMC \$+09
11C ->47D4	31C R= 1	000 NOP	108 ->4219	13D ?NC XQ	088 SETF 5	2DC R= 13	38E RSHFA ALL
001 ?NC XQ	150 LDRR- 5	020 XQ->60	171 ?NC XQ	11C ->474F	36B JNC *-13	010 LDRR- 0	31C R= 1
130 ->4C00	2F0 WRITE DATA	020 XQ->60	130 ->4C5C	34C ?FSET 12	2B9 ?NC XQ	3D4 R=R-1	150 LDRR- 5
241 ?NC XQ	15C R= 6	2C9 ?NC XQ	04E C=0 ALL	360 ?C RTN	12C ->4BAE	1E2 C=C+C \$R	31C R= 1
11C ->4790	110 LDRR- 4	118 ->4B62	0A8 WRIT 2(Y)	3CC ?KEY	33C RCR 1	1E2 C=C+C \$R	102 A=C \$R
046 C=0 S1X	010 LDRR- 0	188 SETE 11	2E0 WRITE DATA	141 ?C GD	10E A+C AH	1E2 C=C+C \$R	178 READ 5(M)

4C BLOCK

40 BLOCK

0	1	2	3	4	5	6	7
014 20 T 014 20 T 0E6 C>B S&X 010 16 P 020 32 020 32 13C ->4FCD 013 19 S							
005 5 E 005 5 E 184 CLRFX 11 010 16 P 00D 13 M 002 2 B 00E A=0 ALL 017 23 W							
013 19 ST 013 19 S 261 ?NC XQ 005 5 E 014 20 M 015 21 F 184 CLRFX 11 014 20 W							
014 20 T 014 20 T 120 ->4998 004 4 D 012 18 R 006 6 F 368 WRIT 13(c) 003 3 T							
220 544 220 544 18C ?FSET 11 020 32 020 32 020 32 046 C=0 S&X 208 520 CH							
3A5 ?NC XQ 130 LDI S&X 311 ?C GO 003 3 C 014 20 T 014 20 T 1E8 WRIT 7(0) 2E1 ?NC 60							
118 ->46E9 020 32 13F ->4FC4 001 1 A 005 5 E 005 5 E 32C ?FI 1 13E ->4FB8							
3BD ?NC XQ 2F0 WRITE DATA 046 C=0 S&X 012 18 R 013 19 S 013 19 ST 087 JC *#10 166 A=A+1 S&X							
118 ->46EF 04E C=0 ALL 2F0 WRITE DATA 204 516 D 014 20 T 014 20 T 226 C=C+1 S&X 168 WRIT 5(M)							
003 3 C 15C R= 6 265 ?NC XQ 108 SETF 8 220 544 220 544 3E3 JMC *-04 32C ?FI 1							
012 18 R 390 LD&R- E 13C ->4F99 0C8 SETF 10 108 SETF 8 104 CLRFX 8 32B WRIT 12(b) 013 JMC *#02							
020 32 15C R= 6 3BD ?NC XQ 11B JMC *#23 083 JMC *#10 0C4 CLRFX 10 3BD ?NC XQ 188 SETF 11							
012 18 R 10E A=C ALL 118 ->46EF 3BD ?NC XQ 3BD ?NC XQ 265 ?NC XQ 118 ->46EF 10C ?FSET 8							
00F 15 O 162 A=A+1 OR 003 3 C 118 ->46EF 118 ->46EF 13C ->4F99 008 8 H 0EB JMC *#1D							
00D 13 M 21C R= 2 00C 12 L 003 3 C 003 3 C 244 CLRFX 9 004 4 D 023 JMC *#04							
020 32 110 LD&R- 4 009 9 I 012 18 R 012 18 R 335 ?NC XQ 020 32 268 WRIT 9(0)							

4D BLOCK

8	9	A	B	C	D	E	F
J2C ?FI 1	03D 61 =	02E B=0	ALL JDD ?NC XQ	00F 15 0	226 C=C+1 S\$X	32C ?FI 1	2E8 WRIT 11(a)
02B JNC \$+05	220 544	046 C=0	S\$X 0AC ->2BF7	00F 15 0	226 C=C+1 S\$X	2C3 JNC \$-28	32C ?FI 1
166 A=A+1	S\$X 3A1 ?NC XQ	2E8 WRIT 11(a)	3D5 ?NC XQ	020 32	226 C=C+1 S\$X	2E3 JNC \$-24	
3E3 JNC \$-04	014 ->05E8	32C ?FI 1	118 ->46F5	006 6 F	000 NOP	3E3 JNC \$-04	2E8 WRIT 11(a)
2A5 ?NC GO	3B8 READ 14(d)	193 JNC \$+32	24C ?FSET 9	001 1 A	121 ?NC GO	2E8 WRIT 11(a)	32C ?FI 1
13A ->4EA9	130 LDI S\$X	226 C=C+1 S\$X	205 ?C GO	013 19 S	13A ->4E48	32C ?FI 1	2C3 JNC \$-28
01E A=0 MS	020 32	3E3 JNC \$-04	13F ->4F81	214 532 T	038 READ 0(T)	363 JNC \$-14	2E8 WRIT 11(a)
08E B=A ALL	3E8 WRIT 15(e)	3BD ?NC XQ	279 ?NC GO	383 JNC \$-10	130 LDI S\$X	2E8 WRIT 11(a)	32C ?FI 1
2E9 ?NC XQ	279 ?NC GO	118 ->4EF	13A ->4E9E	226 C=C+1 S\$X	019 25 Y	32C ?FI 1	2A3 JNC \$-1
12C ->4BBA	13A ->4E9E	00E 14 N	3BD ?NC XQ	226 C=C+1 S\$X	106 A=C S\$X	343 JNC \$-18	2E8 WRIT 11(a)
06E A>B ALL	38D ?NC XQ	00F 15 O	118 ->4EF	226 C=C+1 S\$X	2E8 WRIT 11(a)	2E8 WRIT 11(a)	32C ?FI 1
3BD ?NC XQ	118 ->4E3	020 32	013 19 S	226 C=C+1 S\$X	32C ?FI 1	32C ?FI 1	283 JNC \$-30
118 ->46EF	028 WRIT 0(T)	004 4 D	010 16 P	226 C=C+1 S\$X	3F7 JC \$-02	323 JNC \$-10	2E8 WRIT 11(a)
013 19 S	00E WRIT 3(X)	001 1 A	004 4 D	226 C=C+1 S\$X	038 READ 0(T)	2E8 WRIT 11(a)	32C ?FI 1
010 16 P	00E A=0 ALL	014 20 T	020 32	226 C=C+1 S\$X	0A6 A>C S\$X	32C ?FI 1	263 JNC \$-34
004 4 D	18E A=A-1 MS	201 513 A	014 20 T	226 C=C+1 S\$X	2E8 WRIT 11(a)	303 JNC \$-20	2E8 WRIT 11(a)

## 4E BLOCK

0	1	2	3	4	5	6	7
32C ?FI 1	18B JNC \$+31	2E8 WRIT 11(a)	00F 15 0	226 C=C+1 S&X 005 5	E 020 32	U 118 ->4EF	
243 JNC \$-38	2E8 WRIT 11(a)	32C ?FI 1	00F 15 0	226 C=C+1 S&X 306 ?A-C	S&X 015 21	013 19 S	P
2E8 WRIT 11(a)	32C ?FI 1	0CB JNC \$+19	020 32	226 C=C+1 S&X 013	SETF 9 00E 14	010 16 S	D
32C ?FI 1	16B JNC \$+2D	2E8 WRIT 11(a)	013 19 S	226 C=C+1 S&X 246	013 19 S	004 4	
223 JNC \$-3C	2E8 WRIT 11(a)	32C ?FI 1	00C 12 L	226 C=C+1 S&X 126	A=A+B S&X 014	20 220	544
2E8 WRIT 11(a)	32C ?FI 1	0AB JNC \$+15	00F 15 0	000 NOP 086 B=A S&X	001 1	1 244	CLRF 9
32C ?FI 1	14B JNC \$+29	2E8 WRIT 11(a)	217 535 W	321 ?NC GO 1BE A=A-1	MS 002 2	2 066 A>B	S&X
1EB JNC \$+3D	2E8 WRIT 11(a)	32C ?FI 1	279 ?NC GO 136 ->4DC8	35D ?NC GO 00C 12	LE 009 9 I	130 LDI S&X	
2E8 WRIT 11(a)	32C ?FI 1	08B JNC \$+11	13A ->4E9E	106 A=C S&X 038 READ	0(T) 24C ?FSET 9	024 ->0952	0E6 C>B S&X
32C ?FI 1	12B JNC \$+25	3BD ?NC XQ	226 C=C+1 S&X 130 LDI S&X	038 READ 0(T) 0AB JNC \$+15	149 ?NC XQ 3BD ?NC XQ	130 LDI S&X	
1CB JNC \$+39	2E8 WRIT 11(a)	118 ->4EF	226 C=C+1 S&X 012 18 R	130 LDI S&X 3BD ?NC XQ	149 ?NC XQ 36D ?NC XQ	080 176 0	
2E8 WRIT 11(a)	32C ?FI 1	013 19 S	226 C=C+1 S&X 306 ?A-C	306 ?A-C S&X 118 ->4EF	058 ->16DB	306 ?A-C S&X	
32C ?FI 1	10B JNC \$+21	010 16 P	226 C=C+1 S&X 017 JC \$+02	013 19 S	3A5 ?NC XQ	01B JNC \$+03	
1AB JNC \$+35	2E8 WRIT 11(a)	004 4 D	226 C=C+1 S&X 248 SETF 9	010 16 P	118 ->4E9	0A6 A<C S&X	
2E8 WRIT 11(a)	32C ?FI 1	020 32	226 C=C+1 S&X 130 LDI S&X	004 4 D	3BD ?NC XQ 248 SETF 9		
32C ?FI 1	0EB JNC \$+1D	014 20 T	226 C=C+1 S&X 130 LDI S&X	004 4 D	3BD ?NC XQ 248 SETF 9		

## 4E BLOCK

B	9	A	B	C	D	E	F
1C6 A=A-C S&X 047 JC \$+08	35D ?NC XQ 017 23 W	00C 12 L	10E A=C ALL 03B JNC \$+07	03B JNC \$+07	32C ?FI 1		
04E C=0 ALL 3BD ?NC XQ 118 ->4D67	018 ->4D67 014 20 T	001 1 A	2F0 WRITE DATA 028 WRIT 0(T)	2F0 WRITE DATA 028 WRIT 0(T)	3F3 JNC \$-02		
0C6 C=B S&X 01C ->07EF	04B WRIT 2(Y) 003 3 C	00E 14 N	2F0 WRITE DATA 2F1 ?NC XQ	2F0 WRITE DATA 2F1 ?NC XQ	266 C=C-1 S&X		
1C6 A=A-C S&X 013 19 S	046 C=0 S&X 208 520 H	00B 11 K	2F0 WRITE DATA 12C ->4BBC	2F0 WRITE DATA 12C ->4BBC	027 JC \$+04		
01F JC \$+03	00C 12 L	268 WRIT 9(Q) 2E1 ?NC GO	020 32 C	068 WRIT 1(Z) 3D5 ?NC XQ	3D5 ?NC XQ		
23A C=C+1 M	00F 15 0	32C ?FI 1 13E ->4FB8	003 3 C	368 WRIT 13(c) 118 ->4EF5	368 WRIT 13(c) 118 ->4EF5		
3EB JNC \$-03	217 535 W	083 JNC \$+10 328 WRIT 12(b)	001 1 A	046 C=0 S&X 2BB JNC \$-29	2BB JNC \$-29	3CB JNC \$-07	
03C RCR 3	03B JNC \$+07	226 C=C+1 S&X 0CC ?FSET 10	012 18 R	1E8 WRIT 7(0) 379 ?NC XQ	1E8 WRIT 7(0) 379 ?NC XQ	0AE A<C ALL	
10E A=C	ALL 3BD ?NC XQ	3E3 JNC \$-04 179 ?NC GO	204 516 D	32C ?FI 1 118 ->4DE	32C ?FI 1 118 ->4DE	2BC RCR 7	
3A1 ?NC XQ	01C ->07EF	328 WRIT 12(b) 136 ->4D5E	3DD ?NC XQ 02F JC \$+05	068 WRIT 1(Z) 2F0 WRITE DATA	068 WRIT 1(Z) 2F0 WRITE DATA		
014 ->05EB	006 6 F	3BD ?NC XQ 3A5 ?NC XQ	0AC ->2BF7	226 C=C+1 S&X 399 ?NC XQ	226 C=C+1 S&X 399 ?NC XQ	2E8 WRIT 11(a) 2E8 WRIT 11(a)	
3BD ?NC XQ	001 1 A	118 ->4EF	118 ->4E9	335 ?NC XQ 3E3 JNC \$-04	335 ?NC XQ 3E3 JNC \$-04	32C ?FI 1	
01C ->07EF	013 19 S	003 3 C	244 CLRF 9 13C ->4FC	118 ->4E6	118 ->4E6	3F3 JNC \$-02	
025 37 Z	214 532 T	009 9 I	3BD ?NC XQ 028 WRIT 0(T)	1A9 ?NC GO 136 ->4D6A	068 WRIT 1(Z) 130 LDI S&X	2E8 WRIT 11(a) 2E8 WRIT 11(a)	
220 544	3DD ?NC XQ	020 32	118 ->4EF	32D ?NC XQ 168 WRIT 5(M)	168 WRIT 5(M) 00F 15 0	32C ?FI 1	
24C ?FSET 9	OAC ->2BF7	013 19 S	002 2 B	32C ?FI 1 2E8 WRIT 11(a) 3F7 JC \$-02	2E8 WRIT 11(a) 3F7 JC \$-02		

## 4F BLOCK

0	1	2	3	4	5	6	7
3D5 ?NC XQ 204 516 D	136 ->4D6A 136 ->4DA7	001 1 A	226 C=C+1 S&X 014 20 T	T 001 1 A			
118 ->4EF5 3DD ?NC XQ 0AC ->2BF7	38D ?NC XQ 03B READ 0(T)	004 4 D	3E3 JNC \$-04 02F 47	/ 004 4 D			
24C ?FSET 9 04C ->2BF7	118 ->4E3 36A ?A-C R-<	020 32	2EB JNC \$-23 012 18 R	R 020 32			
2F5 ?C GO 335 ?NC XQ 02B WRIT 0(T)	02B WRIT 0(T) 043 JNC \$+14	005 5 E	03B READ 0(T) 005 5 RE	005 5 E			
13B ->4EBD 13C ->4FC	32D ?NC XQ 3D5 ?NC XQ	012 18 R	0AE A<C ALL 001 1 A	A 012 18 R			
244 CLRF 9 368 WRIT 13(c) 3BD ?NC XQ	368 WRIT 13(c) 118 ->4CB	212 530 R	2BC RCR 7 004 4 D	212 530 R			
3BD ?NC XQ 130 LDI S&X 020 32	2BC RCR 7 24C ?FSET 9	123 JNC \$+24	36A ?A-C R-< 020 32	3BD ?NC XQ 05B JNC \$+0B			
118 ->4EF 020 32	10E A=C ALL 1AF JC \$+35	012 18 R	2EF JC \$-23 04F 79 D	2EF JC \$-23 04F 79 D			
013 19 S 006 C>B S&X 006 A=0 S&X	0E8 WRIT 3(X) 3BD ?NC XQ	266 C=C-1 S&X 3D5 ?NC XQ	3D5 ?NC XQ 020 32	3BD ?NC XQ 118 ->4EF			
001 1 A 006 A=0 S&X 006 C=0 S&X	046 C=0 S&X 118 ->4EF	01F JC \$+03	118 ->4EF5 24B 587 K	24B 587 K			
00D 13 M 1E8 WRIT 7(0) 2E8 WRIT 11(a)	028 WRIT 3(B) 017 23 W	0E6 C>B S&X 2F3 JNC \$-22	32D ?NC GO 012 18 R	32D ?NC GO 005 5 E			
005 5 E 32C ?FI 1 \$+05	32C ?FI 1 012 18 R	0E7 JC \$+1C	13A ->4ECB 001 1 A	13A ->4ECB 001 1 A			
020 32 02F JC \$+05	02B JNC \$+05 014 20 T	046 C=0 S&X 3BD ?NC XQ	3BD ?NC XQ 004 4 D	3BD ?NC XQ 004 4 D			
003 3 C 166 A=A+1 S&X 001 1 A 3E3 JNC \$-04	226 C=C+1 S&X 02F 47 /	2E8 WRIT 11(a) 012 18 R	118 ->4EF 020 32	118 ->4EF 020 32			
012 18 R 1A9 ?NC GO	29D ?NC GO 005 5 E	32C ?FI 1 023 JNC \$+04	012 18 R 005 5 E	012 18 R 005 5 E			

## 4F BLOCK

8	9	A	B	C	D	E	F
24B 587 K 004 4 D	10A A=C R-<	3A0 ?NC RTN 3C ?KEY	32C ?FI 1 014 20 T	T 000 NOP			
3BD ?NC XQ 020 32	2BC RCR 7 3A5 ?NC XQ 3F3 JNC \$-02	3A5 ?NC XQ 3B1 ?C GO	3B1 ?C GO 205 517 E	E 000 NOP			
0AC ->2BF7 014 20 T	2F0 WRITE DATA 118 ->4E9	201 ?NC GO 118 ->4EC	3BD ?NC XQ 000 NOP	000 NOP			
3A5 ?NC XQ 005 5 E	2F0 WRITE DATA 3BD ?NC XQ 102 ->4080	102 ->4080 3CC ?KEY	3CC ?KEY 04C ->2BF7	04C ->2BF7 000 NOP			
118 ->4E9 013 19 S	2F0 WRITE DATA 118 ->4EF	3BD ?NC XQ 118 ->4EF 265 ?NC XQ	265 ?NC XQ 000 NOP	000 NOP			
015 ?NC GO 214 532 T	04E C=0 ALL 003 3 C	118 ->4EF 141 ?NC GO	141 ?NC GO 13C ->4F99	13C ->4F99 000 NOP			
13E ->4F06 265 ?NC XQ 03B READ 0(T)	03B READ 0(T) 012 18 R	003 3 C 102 ->4050	102 ->4050 3A5 ?NC XQ	3A5 ?NC XQ 000 NOP			
24C SETF 9 13C ->4F99 36A ?A-C R-<	36A ?A-C R-< 203 515 C	012 18 R 24B SETF 9	24B SETF 9 118 ->4E9	118 ->4E9 000 NOP			
3BD ?NC XQ 35B JNC \$-15 04F JC \$+09	04F JC \$+09 3BD ?NC XQ 020 32	020 32 3BD ?NC XQ	3BD ?NC XQ 000 NOP	000 NOP			
118 ->4EF 35D ?NC XQ 003 3 C	04E C=0 ALL 01C ->07EF	012 18 R 118 ->4EF	118 ->4EF 13A ->4EBD	13A ->4EBD 000 NOP			
012 18 R 118 ->46D7 04E C=0 ALL 03B READ 0(T)	03B READ 0(T) 020 32	00F 15 0 003 3 C	003 3 C 000 NOP	000 NOP			
020 32 02F JC \$+05	02F JC \$+05 001 1 A	363 JNC \$-14 012 18 R	012 18 R 000 NOP	000 NOP			
012 18 R 118 ->46CB 04E C=0 ALL 03B READ 0(T)	04E C=0 ALL 204 516 D	35D ?NC XQ 017 23 W	017 23 W 000 NOP	000 NOP			
005 5 E 10E A=C ALL 03B READ 0(T) 2BD ?NC XQ	118 ->46D7 012 18 R	118 ->46D7 012 18 R	012 18 R 000 NOP	000 NOP			
001 1 A 2BC RCR 7 36A ?A-C R-<	36A ?A-C R-< 0AC ->2BF7	268 WRIT 9(0) 009 9 I	009 9 I 068 107 K	068 107 K			

EO BLOCK

## HP41 CARD READER (VERSION 1D) DIS-ASSEMBLER LISTING 5-AUG-81

	0	1	2	3	4	5	6	7
01E	30	~	008	8	H	000	0	0
025	37	Z	0AC	172	,	070	112	P
000	0	Y	008	8	H	000	0	0
059	89	Y	088	184	H	076	118	V
008	11	K	008	8	H	000	0	0
04A	74	J	004	4	D	07C	124	I
002	2	B	008	8	H	000	0	0
004	4	B	051	81	Q	082	130	B
002	2	B	001	1	A	000	0	0
008	11	K	061	97	S	088	136	H
003	3	C	000	0	Q	000	0	0
0C2	194	B	05E	94	~	08E	142	N
008	11	K	000	0	Q	000	0	0
089	137	I	064	100	d	094	148	T
003	3	C	000	0	Q	000	0	0
09D	157	J	064	106	j	09E	158	~
						012	18	R
						005	5	E
						0B1	177	1
						037	55	7
						013	19	S

EO BLOCK

	8	9	A	B	C	D	E	F
004	4	D	010	16	P	358 ST=C X	380 ->EC5A	005
037	55	7	013	19	S	151 ?NC XQ	008 SETF 3	5 E
098	JNC	*+13	004	4	D	000 ->0054	398 C=ST X	146 A=>C S&X
087	183	7	037	55	7	398 C=ST X	169 ?NC XQ	046 C=>A S&X
010	16	P	008 JNC	*+01	0FC RCR 10	18C RCR 11	->EC5A	206 C=C-1 S&X
013	19	S	234 C=C+1 M	0AE A=>C ALL	348 WRIT 14(d)	208 SETF 2	1B9 ?NC XQ	266 C=C-1 S&X
004	4	D	330 FETCH S&X	25D ?NC XQ	305 ?NC GO	36B JNC *-13	038 ->166E	046 A=>C S&X
037	55	7	26E C=C-1 ALL	01C ->0797	002 ->00F1	093 147 S	ODC R= 10	34C ST=0
068	JNC	*+0D	063 JNC	*+0C	05C R= 4	089 137 I	2F0 WRITE DATA	048 SETF 4
088	184	B	089 137 I	042 A=>C BR	013 19 S	03E 62 >	0AE A=>C ALL	011 ?NC XQ
010	16	P	010 16 P	053 JNC *+0A	037 55 7	130 LDI S&X	0AE A=>C ALL	000 ->0004
013	19	S	013 19 S	098 152 X	169 ?NC XQ	270 RAM SLCT	0EE C=>B ALL	26E C=C-1 ALL
004	4	D	004 4 D	009 9 I	380 ->EC5A	378 READ 13(c)	3D4 R=R-1	26E C=C-1 ALL
037	55	7	037 55 7	006 6 F	3AB JNC *-OB	03C RCR 3	146 A=>C S&X	1B9 ?NC XQ
03B	JNC	*+07	130 LDI S&X	037 55 7	0AE A=>C ALL	038 READ 0(T)	353 JNC *-16	058 ->166E
0B9	185	9	099 153 Y	169 ?NC XQ	087 135 G	130 LDI S&X	0EE C=>B ALL	04E C=0 ALL
			00E 14 N	00A 10 J	0206	2F0 WRITE DATA	OCE 206 *	270 RAM SLCT

E1 BLOCK

	0	1	2	3	4	5	6	7
0EE C=>B	ALL	009	9	I	01B JNC *+03	0EE C=>B ALL	130 LDI S&X	037 55 7
0E8 WRIT	3(X)	037	55	7	019 25 Y	361 ?NC XQ	013 19 S	130 LDI S&X
198 C=M	ALL	088 JNC	*+11	001 1 A	050 ->14DB	007 7 6	1B1 ?NC XQ	014 20 T
0A8 WRIT	2(Y)	099	153	Y	234 C=C+1 M	01D ?NC XQ	358 ST=C X	1BC RCR 11
3E0 RTN	001	1	A	330 FETCH S&X	060 ->1807	141 ?NC XQ	011 ?NC XQ	130 LDI S&X
089	137	I	09A 154 Z	358 ST=C X	2F0 WRITE DATA	288 SETF 7	27E C=C-1 MS	00E A=0 ALL
01A	26	Z	013 19 S	234 C=C+1 M	288 SETF 7	31D ?NC GO	381 ?NC GO	09C R= 5
013	19	S	013 19 S	330 FETCH S&X	2EE ?C80 ALL	092 ->24C7	00A ->02E0	03C RCR 3
004	4	D	037 55 7	39C R= 0	089 ?NC GO	089 137 I	166 A=>1 S&X	0AA A=>C R<-
037	55	7	053 JNC	*+0A	058 6=C BR,+	05A ->162E	270 RAM SLCT	378 READ 13(c)
0CB	JNC	*+19	019 25 Y	011 ?NC XQ	2F6 ?C40 XS	014 20 T	3E0 RTN	046 C=0 S&X
099	153	Y	091 145 0	000 ->0004	3EF JC *-03	007 7 6	087 135 G	3B2 ->EC9F
091	145	Q	09A 154 Z	04E C=0 ALL	065 ?NC GO	037 55 7	005 5 E	14A A=>C R<-
089	137	I	013 19 S	35C R= 12	05A ->1619	141 ?NC XQ	012 18 R	03C RCR 3
01A	26	Z	009 9 I	098 C=6 BR,+	089 137 I	384 ->E150	00C 12 L	04E C=0 ALL
013	19	S	037 55 7	0AE A=>C ALL	002 2 B	3BB JNC *-09	033 JNC *+06	033 JNC *+06

E1 BLOCK

	8	9	A	B	C	D	E	F
268 WRIT	9(Q)	3B0 ->EC60	3C1 ?NC XQ	244 CLRF 9	33D ?NC XQ	024 ->0952	3BD ?NC XQ	02C ->0B26
3E0 RTN	000	13 M	0B0 ->2CF0	0F8 READ 3(X)	1BC ->6FCF	278 READ 9(Q)	01C ->07EF	189 ?NC XQ
08B	139	K	265 ?NC XQ	130 LDI S&X	181 ?NC XQ	03C RCR 3	212 530 R	3B0 ->EC62
014	20	T	020 ->0899	02E 46 .	3B0 ->EC60	33D ?NC XQ	3A1 ?NC XQ	00A A=0 R<-
013	19	S	198 C=M ALL	348 WRIT 14(d)	018 24 X	384 ->E1CF	014 ->05E8	24C ?FSET 9
012	18	R	22E C=C+1 ALL	149 ?NC XQ	188 SETF 11	1C1 ?NC XQ	046 A=>C S&X	2CF JC *-27
010	16	P	358 ST=C X	024 ->0952	31B JNC *-1D	384 ->E170	01C ->07EF	149 ?NC XQ
037	55	7	20C ?FSET 2	3C5 ?NC GO	087 135 G	33D ?NC XQ	158 H=C ALL	23D 573 =
335 ?NC XQ	3A3 JNC	*-0C	002 ->00F1	005 5 E	1BC ->6FCF	04E C=0 ALL	3DD ?NC XQ	278 READ 9(Q)
1BC ->6FCF	239 ?NC XQ	098 152 X	012 18 R	24C ?FSET 9	270 RAM SLCT	0AC ->2BF7	23A C=C+1 M	268 C=+T 9(Q)
244 CLRF	9	00C ->038E	014 20 T	012 18 R	3C1 ?C GO	378 READ 13(c)	244 CLRF 9	06A A=>C S&X
04E C=0 ALL	24C ?FSET 9	012 18 R	010 16 P	003 ->00F0	03C RCR 3	189 ?NC XQ	03C RCR 3	306 ?CC S&X
158 H=C ALL	29D ?C XQ	010 16 P	037 55 7	244 CLRF 9	33B JNC *-19	1C6 A=A-C S&X	3B0 ->EC62	3E0 RTN
270 RAM SLCT	000 ->03A7	037 55 7	244 CLRF 9	384 ->E16C	149 ?NC XQ	01E A=0 HS	003 JNC *+00	198 C=M ALL
038 READ 0(T)	159 ?NC XQ	32D ?NC XQ	181 ?NC XQ	33B JNC *-19	0B0 ->2CF0	099 ?NC XQ	306 ?CC S&X	28B JNC *-2F
181 ?NC XQ	024 ->0956	1BC ->6FCB	384 ->E16C	149 ?NC XQ	0B0 ->2CF0	099 ?NC XQ	3E0 RTN	3E0 RTN

## E2 BLOCK

	0	1	2	3	4	5	6	7
081	129	A	19D ?NC X0	05A C=0 M	013 JNC \$+02	30A ?ACC R-	204 CLRF 2	225 ?NC X0
014	20	T	38C ->E367	2BC RCR 7	226 C=C+1 S&X	11F JC \$+23	148 SETF 6	04C ?FSET 4
004	4	D	208 SETF 2	046 A>C S&X	27E C=C-1 MS	104 CLRF 8	38B ->EE89	24D ?NC X0
012	18	R	30C ?FSET 1	0F0 C>N ALL	11E A=C MS	36A ?ABC R-	04B JNC \$+09	38C ->E393
304	CLRF 1		125 ?C X0	20C ?FSET 2	03C RCR 3	017 JC \$+02	3B4 ->ED68	05B JNC \$+08
03B	JNC \$+07		39D ->E749	1AD T C GO	19C R= 11	108 SETF 8	051 ?NC X0	065 ?NC X0
098	152	X	30C ?FSET 1	38B ->E26B	11A A=C M	080 C=N ALL	3B8 ->EE14	3B8 ->EE19
001	1	A	1B5 ?NC X0	0CA C=B R-	080 C=N ALL	15C R= 6	04C ?FSET 4	013 JNC \$+02
014	20	T	39C ->E775	082 A>C P-Q	0CA C=B R-	29D ?NC X0	383 JNC \$-07	162 A=>1 ER
004	4	D	346 ?ABC	080 C=N ALL	070 N=C ALL	070 N=C ALL	139 ?NC X0	362 ?AC ER
012	18	R	037 JC \$+06	306 ?ACC S&X	080 C=N ALL	03C RCR 3	058 ->E167	35F JC \$-15
308	SETF 1		381 ?NC X0	017 JC \$+02	18C RCR 11	106 A=C S&X	3B8 C>ST X	20C ?FSET 2
044	CLRF 4		3AC ->EBEO	106 A=C S&X	106 A=C S&X	1A6 A=A-1 S&X	145 ?NC X0	0A1 ?C GO
064	CLRF 5		3D5 ?NC X0	0A6 A>C S&X	0CE C-B ALL	3EE LSHFA ALL	3B8 ->EE51	3B8 ->E228
2E1	?NC X0		088 ->E2F5	33C RCR 1	03C RCR 3	07C RCR 4	013 JNC \$+02	0E9 ?NC GO
348	->EAB8		038 56 B	2FE ?C80 MS	31C R= 1	146 A=A+C S&X	18B JNC \$+31	38A ->E23A
						3B0 ->ECEO	004 CLRF 3	10E A=C ALL

## E2 BLOCK

	8	9	A	B	C	D	E	F
070	N=C	ALL	1A2 A=A-1 ER	2C5 ?NC X0	3AA ->EAAC	JBA ->EE50	3E0 RTN	366 ?ABC S&X
384	CLRF 0		02F JC \$+05	38B ->E2B1	080 C=N ALL	38C ?FSET 0	201 ?NC GO	340 ?NC RTN
2DC	R= 13	LDI S&X	130 LDI S&X	013 JNC \$+02	046 C=0 S&X	01F JC \$+03	3BA ->EE80	130 LDI S&X
150	LDRR- 5	006 6 F	063 JNC \$+0C	226 C=C+1 S&X	308 SETF 1	04E C=0 ALL	018 24 X	OFC RCR 10
3CE	RSHFC ALL	1C6 A=A-C S&X	065 ?NC X0	09C R= 5	013 JNC \$+02	220 C>KEY KY	366 ?ABC S&X	1EE C=C+C ALL
0F2	C>B P-Q	388 SETF 0	38B ->EE19	2E2 ?C80 ER	208 SETF 2	3C8 CLRKEY	367 JC \$-14	1EE C=C+C ALL
149	?NC X0	144 CLRF 6	013 JNC \$+02	017 JC \$+02	080 C=N ALL	3CC ?KEY	188 SETF 11	3C6 RSHFC S&X
024	->0952	088 SETF 5	3CB JNC \$-07	226 C=C+1 S&X	09C R= 5	3F7 JC \$-02	3E0 RTN	106 A=C S&X
378	READ 13(c)	104 CLRF 8	1A2 A=A-1 ER	006 A=0 S&X	2E2 ?C80 ER	03C RCR 3	0BD ?NC G	130 LDI S&X
03C	RCR 3	1D1 ?NC X0	1A2 A=A-1 ER	166 A=A+1 S&X	037 JC \$+06	106 A=C S&X	3A6 ->E92	007 7 6
106	A=C S&X	3B4 ->ED74	302 ?ACC ER	30C ?FSET 1	30C ?FSET 1	130 LDI S&X	1A2 A=A-1 ER	146 A=>C S&X
130	LDI S&X	013 JNC \$+02	2A3 JNC \$-2C	013 JNC \$+02	033 JNC \$+06	087 135 6	1A2 A=A-1 ER	0B0 C=N ALL
01A	26 Z	023 JNC \$+04	051 ?NC X0	16E A=A+1 ALL	20C ?FSET 2	366 ?ABC S&X	302 ?ACC ER	0A6 A>C S&X
146	A=A+C S&X	305 ?NC X0	3B8 ->EE14	279 ?NC X0	023 JNC \$+04	340 ?NC RTN	1FD ?NC 6	1C6 A=A-C S&X
15C	R= 6	388 ->E2C1	393 JNC \$-0E	3B8 ->EE9E	013 JNC \$+02	130 LDI S&X	38A ->E27F	357 JC \$-16
1A2	A=A-1 ER	083 JNC \$+10	2B1 ?NC GO	141 ?NC GO	244 CLRF 9	0C3 195 C	OAA A>C R-	130 LDI S&X

## E3 BLOCK

	0	1	2	3	4	5	6	7
070	112 P	38B SETF 0	0CB JNC \$+19	0B0 C=N ALL	1A2 A=A-1 ER	24C ?FSET 9	3B0 ->EC4E	1BC RCR 11
1C6	A=A-C S&X	166 A=A+1 S&X	0B0 C=N ALL	0E3 JNC \$+1C	302 ?ACC ER	013 JNC \$+02	04D 77 #	OEE C>B ALL
337	JC 1-1A	3EE LSHFA ALL	2BC RCR 7	272 C=C-1 P-Q	023 JNC \$+04	272 C=C-1 P-Q	208 SETF 2	285 ?NC X0
1C6	A=A-C S&X	0B0 C=N ALL	31C R= 1	20C ?FSET 2	0AA A>C R-	265 ?NC X0	384 CLRF 0	014 ->05A1
033	JNC \$+06	0CA C=B R-	30C ?FSET 1	3E7 JC \$-04	1C2 A=A-C ER	3B0 ->EC99	0C4 CLRF 10	OFA C>B M
09C	R= 5	070 N=C ALL	06F JC \$+0D	24C ?FSET 9	233 JNC \$-3A	0B0 C=N ALL	001 ?NC GO	1BC RCR 11
2C2	?B#0	ER	2BC RCR 7	106 A=C S&X	051 ?NC X0	2BC RCR 7	392 ->E400	046 C=0 S&X
30B	JNC 1-F	0AA A>C R-	272 C=C-1 P-Q	3D3 JNC \$-06	052 READ O(T)	01C R= 3	270 RAM SLCT	270 RAM SLCT 9(Q)
15C	R= 6	1C6 A=A-C S&X	24C ?FSET 9	208 SETF 2	38B ->EE14	021 R= 3	05C ->1730	268 WRIT 9(Q)
013	JNC \$+02	104 CLRF 8	023 JNC \$+04	065 ?NC X0	305 ?NC X0	033 JNC \$+06	04E C=0 ALL	3E0 RTN
248	SETF 9	144 CLRF 6	20C ?FSET 2	3B8 ->EE19	388 ->E2C1	055 ?NC X0	0A6 A>C S&X	084 CLRF 5
384	CLRF 0	1A1 ?NC X0	017 JC \$+02	013 JNC \$+02	013 JNC \$+02	3B4 ->ED15	106 A=C S&X	2FO WRITE DATA
006	A=0 S&X	3B4 ->ED68	272 C=C-1 P-Q	313 JNC \$-1E	3E3 JNC \$-01	038 READ O(T)	1BC RCR 11	31D ?NC X0
1A2	A=A-1 ER	163 JNC \$+2C	0A6 A>C S&X	302 ?ACC ER	2BC RCR 7	04A C=0 R-	130 LDI S&X	0A4 ->29C7
1A2	A=A-1 ER	2C5 ?NC X0	27D ?NC X0	047 JC \$+08	31C R= 1	2FO WRITE DATA	0C0 192 #	0B0 C=N ALL
01F	JC	388 ->E2B1	3B0 ->EC9F	1A2 A=A-1 ER	272 C=C-1 P-Q	139 ?NC X0	246 C=A-C S&X	07C RCR 4

## E3 BLOCK

	8	9	A	B	C	D	E	F
OAA	A>C R-<	130 LDI S&X	130 LDI S&X	013 JNC \$+02	013 19 S	3D8 C>ST X	053 JNC \$+0A	036 B=0 XS
10A	A=C R-<	110 272 P	0C0 192 #	23E C=C+1 MS	012 18 R	3B0 ?NC GO	11C R= 8	0DB C>G ER,+
OFC	RCR 10	3C3 JNC \$-08	086 B=A S&X	3CE RSHFC ALL	3C4 ST=0	3A2 ->E8E3	043 JNC \$+08	01C R= 3
070	N=C ALL	130 LDI S&X	1C6 A=A-C S&X	34C ?FSET 12	2E1 ?NC X0	01C R= 3	15C R= 6	3E0 RTN
366	?ABC S&X	384 900 D	22D ?NC X0	013 JNC \$+02	3A8 ->EAB8	01E C=0 ALL	033 JNC \$+06	1B0 POP ADR
360	?C RTN	3AB JNC \$-0B	3B8 ->EF8B	23E C=C+1 MS	308 SETF 1	0DB C>G ER,+	05C R= 4	21A C=C+A M
088	SETF 5	046 C=0 S&X	1D0 LDRR- 7	268 WRIT 9(Q)	0CC ?FSET 10	0B0 C=N ALL	023 JNC \$+04	1E0 GOTO ADR
3E0	RTN	266 C=C-1 S&X	23A C=C+1 M	338 READ 12(b)	057 JC \$+0A	07C RCR 4	21C R= 2	239 ?NC X0
130	LDI S&X	397 JC \$-0E	19C R= 11	39C R= 0	2C9 ?NC X0	270 RAM SLCT	013 JNC \$+02	00C ->038E
030	48 0	08C 140 L	232 C=C+1 P-Q	0A2 A>C ER	3B8 ->EFB2	00E A=0 ALL	39C R= 0	OFC RCR 10
266	C=C-1 S&X	00C 12 L	10E A=C ALL	0AE A>C ALL	08C ?FSET 5	3D1 ?NC X0	038 READ O(T)	3D8 C>ST X
3FB	JNC \$-01	001 1 A	149 ?NC X0	070 N=C ALL	02B JNC \$+05	0D8 C>G ER,+	304 CLRF 1	304 CLRF 1
JEO	RTN	017 23 W	024 ->0952	1FD ?NC GO	3D8 C>ST X	38C ->E3F4	39C R= 0	3D8 C>ST X
130	LDI S&X	000 NOP	278 READ 9(Q)	3A2 ->EB7F	08A B=A R-	35C R= 12	0DB C>G ER,+	07C RCR 1
094	148 T	0C1 ?NC X0	05E C=0 MS	082 130 B	3A9 ?NC GO	063 JNC \$+0C	0E6 C>B S&X	JAB WRIT 14(d)
3JB	JNC \$-05	05C ->1730	0CC ?FSET 10	015 21 U	3A2 ->E8EA	0DC R= 10	0C6 C B S&X	3E0 RTN

## E4 BLOCK

0	1	2	3	4	5	6	7
OBO C=N ALL OFC RCR 10 OAA A>C R<- 130 LDI \$&X 0A6 A>C S&X 27A C=C-1 M 38C ->E37A 04F 79 O							
268 WRIT 9(0) OAA A>C R<- 359 ?NC XQ 044 ->29D6 02F 47 / 36B WRIT 13(c) 03C RCR 3 27A C=C-1 M 04E C=0 ALL 059 89 O							
28C RCR 7 070 N=C ALL 0AA A>C R<- 2F0 WRITE DATA 0B0 C=N ALL 0A6 A>C S&X 08C ->239A 0E6 C>B S&X 05A 90 Y							
0AE A>C ALL 34D ?NC XQ 0AA A>C R<- 0FC RCR 10 13C RCR 8 0B0 C=N ALL 34D ?NC XQ 1BC RCR 11 05B 91 L							
01C R= 3 38C ->E3D3 0FC RCR 10 13C RCR 8 0B0 C=N ALL 34D ?NC XQ 0BA A>C M 04E 78 E							
0BD ?NC XQ 2C6 ?B80 S&X 070 N=C ALL 046 A>C S&X 0AA A>C R<- 38C ->E3D3 19D ?NC XQ 085 133 F							
08C ->232F 037 JC *+06 130 LDI S&X 190 LDR- 6 366 ?A9C S&X 2C6 ?B80 S&X 394 ->E567 3A3 931 *							
130 LDI S&X 244 CLRF 9 0BF 191 ? 01C R= 3 01F JC *+03 033 JMC *+06 084 132 D							
010 16 P 1E9 ?NC XQ 22E C=C+1 ALL 17C RCR 6 00E A=0 ALL 0C9 ?NC XQ 060 96 011 17 Q							
24C ?FSET 9 38C ->E37A 270 RAM SLCT 070 N=C ALL 02B JMC *+05 398 ->E632 051 81 012 18 R							
013 JMC *+02 08C ?FSET 5 0AE A>C ALL 04E C=0 ALL 329 ?NC XQ 043 67 C 052 82 013 19 S							
1E6 C=C+C S&X 3C3 JNC 8-08 038 READ 0(T) 270 RAM SLCT 0A4 ->29CA 000 0 P 04C 76 014 20 T							
2A6 C=C-1 S&X 24C ?FSET 9 0AE A>C ALL 0B0 C=N ALL 329 ?NC XQ 2D0 720 P 1C7 455 015 21 U							
206 C=C+A S&X 04F JC *+09 34E ?A80 ALL 13C RCR 8 0AA A>C R<- 0B0 C=N ALL 34D ?NC XQ 053 83 016 22 V							
042 C=0 PR 0B0 C=N ALL 3D7 JC 8-06 0AE A>C ALL 378 READ 13(c) 13C RCR 8 38C ->E3D3 050 80 017 23 W							
226 C=C+1 S&X 07C RCR 4 0AE A>C ALL 378 READ 13(c) 13C RCR 8 1E9 ?NC XQ 055 85 018 24 X							

## E4 BLOCK

8	9	A	B	C	D	E	F
019 25 Y 068 104 h 042 66 B 080 128 @ 1C2 450 B 1A7 423 ' 029 41 ) 1AD 429 -							
01A 26 Z 05C 92 \ 06A 106 j 081 129 A 1FD 509 ) 1A9 425 ) 1AB 427 + 1AF 431 /							
083 131 C 05D 93 ] 06B 107 k 082 130 B 1FF 511 & 1A9 425 ) 1AB 427 + 1AF 431 /							
25F 607 05E 94 ^ 06C 108 1 39F 927 - 39D 925 ] 1A9 425 ) 1AB 427 + 1AF 431 /							
01B 27 [ 069 105 i 06D 109 9 38B 907 - 39E 926 ] 1F9 505 w 1A9 427 + 1FB 507 {							
043 67 C 06E 110 n 1F3 499 s 340 928 - 397 919 w 000 0 v 1A9 427 + 000 0 e							
000 0 @ 000 0 1F5 501 u 000 0 @ 398 920 x 396 918 v 1A9 427 + 201 513 A							
089 137 I 071 113 e 049 73 I 079 121 u 1A7 423 ' 020 32 - 1AD 429 - 030 48 0							
062 98 b 075 117 u 08F 143 o 078 120 x 1A7 423 ' 021 33 - 1AD 429 - 031 49 1							
1C4 452 D 077 119 u 341 929 ! 045 69 E 1A7 423 ' 022 34 - 1AD 429 - 032 50 2							
1CA 458 J 399 921 Y 076 118 v 063 99 c 1A7 423 ' 023 35 - 1AD 429 - 033 51 3							
04D 77 * 39A 922 Z 387 903 g 067 103 d 1A7 423 ' 024 36 - 1AD 429 - 034 52 4							
1CD 461 * 3A2 930 * 381 897 A 064 100 d 1A7 423 ' 025 37 - 1AD 429 - 035 53 5							
061 97 a 344 932 s 1F7 503 w 066 102 f 1A7 423 ' 026 38 - 1AD 429 - 036 54 6							
056 86 V 040 64 P 074 116 t 046 70 F 1A7 423 ' 027 39 - 1AD 429 - 037 55 7							
057 87 W 041 65 A 072 114 r 1C2 450 B 1A7 423 ' 028 40 ( 1AD 429 - 038 56 8							

## E5 BLOCK

0	1	2	3	4	5	6	7
039 57 9 1B3 435 3 1B8 440 8 1BB 443 ; 276 630 v 1C0 448 @ 00A 10 J 175 ?NC GO							
1B1 433 1 1B5 437 5 1B8 440 8 1BD 445 = 276 630 v 1DF 479 - 1B0 464 P 392 ->E45D							
1B1 433 1 1B5 437 5 1B8 440 8 1BD 445 = 276 630 v 1E3 483 - 1D3 467 S 0C9 ?NC XQ							
1B1 433 1 1B5 437 5 1B8 440 8 1BD 445 = 276 630 v 1E7 487 - 1D6 470 V 398 ->E632							
1B1 433 1 1B5 437 5 1B8 440 8 1BD 445 = 276 630 v 1EB 491 - 1D9 473 Y 043 67 C							
1B1 433 1 1B5 437 5 1B8 440 8 1BD 445 = 276 630 v 1EF 495 - 1DC 476 \ 2CF 719 O							
1B1 433 1 203 515 C 39B 923 L 205 517 E 39C 924 \ 207 519 000 0 e 04E C=0 ALL							
1B3 435 3 1B8 440 8 1BB 443 ; 276 630 v 1C0 448 @ 001 1 A 1B0 POP ADR 270 RAM SLCT							
1B3 435 3 1B8 440 8 1BB 443 ; 276 630 v 1C0 448 @ 002 2 B 21A C=C+A M 278 READ 9(0)							
1B3 435 3 1B8 440 8 1BB 443 ; 276 630 v 1C0 448 @ 003 3 C 330 FETCH S&X 39C R= 0							
1B3 435 3 1B8 440 8 1BB 443 ; 276 630 v 1C0 448 @ 004 4 D 2F6 ?C#0 XS 10E A=C ALL							
1B3 435 3 1B8 440 8 1BB 443 ; 276 630 v 1C0 448 @ 005 5 E 025 ?C XQ 33C RCR 1							
1B3 435 3 1B8 440 8 1BB 443 ; 276 630 v 1C0 448 @ 006 6 F 399 ->E609 202 C=C+A PR							
1B3 435 3 1B8 440 8 1BB 443 ; 276 630 v 1C0 448 @ 007 7 G 02D ?NC XQ 202 C=C+A PR							
1B3 435 3 1B8 440 8 1BB 443 ; 276 630 v 1C0 448 @ 008 8 H 398 ->E637 202 C=C+A PR							
1R3 435 3 1B8 440 8 1BB 443 ; 276 630 v 1C0 448 @ 009 9 I 08C ?FSET 5 38E RSHFA ALL							

## E5 BLOCK

8	9	A	B	C	D	E	F
38E RSHFA ALL 01C R= 3 370 C=C OR A 2A8 680 ( 0E0 224 ' 066 102 P 0CF 207 0 OCF 207 0							
38E RSHFA ALL 098 C=G PR,+ 16D ?NC XQ 086 134 F Q 294 660 T 0CF 207 0 0F 15 0 013 19 S							
202 C=C+A PR,+ 0EE C>B ALL 01C ->075B 291 657 058 88 X 20B 523 K 0CF 207 0 2CF 719 O 099 153 Y							
058 G=C PR,+ 04E C=0 ALL 001 ?NC XQ 0A0 160 2AC 684 , 067 103 S 0CF 207 0 124 0 099 153 Q							
07C RCR 4 2DC R= 13 080 ->2000 293 659 S 07C 124 I 0CF 207 0 0 0 291 657 Q							
05A C=0 M 390 LDR- E 271 ?NC 60 09B 155 00E 14 N 20C 524 L 010 16 P 099 153 Y							
046 C=0 S&X 11C R= 8 3AA ->EA9C 000 0 @ 299 665 Y 068 104 h 2CF 719 O 290 656 P							
33C RCR 1 090 LDR- 2 3D4 980 T 2E0 736 047 71 G 0CF 207 0 0 0 019 25 Y							
1EE C=C+C ALL 05C R= 4 2A7 679 080 176 00E 14 N 20D 525 M 0CF 207 0 2CE 718 V							
1EE C=C+C ALL 3D0 LDR- F 06A 106 j 000 0 @ 299 665 Y 069 105 i 011 17 Q 016 22 V							
1EE C=C+C ALL 3D0 LDR- F 2A9 681 ) 2E0 736 07D 125 Y 0CF 207 0 2CF 719 O 2A9 681 V							
1FE C=C+C MS 2A6 C=-C-1 ALL 066 102 f 0C0 192 @ 00E 14 N 20E 526 N 07E 126 O 016 22 V							
1FA C=C+C M 0AE A>C ALL 290 656 P 292 658 R 299 665 Y 06A 106 J 0CF 207 0 2CF 719 O 2A8 680 C							
01B JMC 8+03 3B8 READ 14(D) 080 128 @ 0BB 187 ; 048 72 H 0CF 207 0 0 0 002 2 B							
11C R= 8 3B0 C=C AND A 295 661 U 000 0 @ 00E 14 N 20F 527 O 07F 127 O 016 22 V							
090 LDR- 2 06E A>B ALL 08A 138 J 2D0 720 P 299 665 Y 07E 123 { 07F 127 O 016 22 V							

## E6 BLOCK

0	1	2	3	4	5	6	7
2AA 682 \$ 1EE C=C+C ALL	1E0 GOTO ADR 3D3 JNC \$-06	043 JNC \$+08	07C RCR 4	09F JC \$+13	01D 29	J	
099 153 Y 37C RCR 12	130 LDI S\$X 1C4 452 D	3E0 RTN 10A A=C	0AE A>C ALL	34D ?MC XQ	366 ?A&C	S\$X	
295 661 U 130 LDI S\$X	190 POP ADR	17C RCR 6	0AE A>C ALL	38C ->E3D3	3D3 JNC	\$-06	
099 153 Y 380 896 P	306 ?A&C S\$X 053 JNC \$+0A	089 ?NC XQ 398 ->E62E	070 N=C ALL	06E A>B ALL	130 LDI S\$X	S\$X	
293 659 S 306 ?A&C S\$X	330 FETCH S\$X 23A C=C+1 M	198 C=M ALL	190 LDPR- 6	010 16 P	3E0 RTN	T	
099 153 Y 03F JC \$+07	38E RSHFA ALL 170 PUSH ADR	170 C=M ALL	08D ?NC GO	306 ?A&C S\$X	04E C=0	ALL	
292 658 R 046 A>C S\$X	38E RSHFA ALL 158 H=C ALL	08E ->2323	04A A>C R<-	067 JC \$+0C	0BA A>C	M	
099 153 Y 088 ?MC XQ	38E RSHFA ALL 0D0 C=M ALL	38C ?FSET 0	0AE A>C ALL	130 LDI S\$X	0DD ?NC XQ		
294 660 T 398 ->E637	246 C=A-C S\$X 07C RCR 4	009 ?C GO	07C RCR 6	01B 27 [	398 ->E637		
106 A=C S\$X 130 LDI S\$X	23A C=C+1 M	083 ->2002	070 N=C ALL	306 ?A&C S\$X	198 C=M	ALL	
1EE C=C+C ALL 047 167	0D0 ?NC XQ	388 SETF 0	046 C=0 S\$X	023 JNC \$+04	03C RCR 3		
1EE C=C+C ALL 3E0 RTN	080 A>C R<-	080 C=M ALL	08D ?NC XQ	130 LDI S\$X	0AE A>C	ALL	
3DA RSHFC M 130 LDI S\$X	398 ->E637	086 A>C R<-	10A A=C R<-	01C 28 \	130 LDI S\$X		
3DA RSHFC M 25F 607	198 C=M ALL 329 ?NC XQ	398 ->29CA	07C RCR 4	3E0 RTN	01F 31		
3DA RSHFC M 306 ?A&C S\$X	330 FETCH S\$X 044 ->29CA	088 ?A&C S\$X	08C ?FSET 5	130 LDI S\$X	246 C=A-C S\$X		
1EE C=C+C ALL 017 JC \$+02	2F6 ?C\$0 XS	366 ?A&C S\$X	0AA A>C R<-				

## E6 BLOCK

8	9	A	B	C	D	E	F
3E0 RTN	03C RCR 3	306 ?A&C S\$X	046 A>C S\$X	148 SETF 6	278 READ 9(0)	24C ?FSET 9	070 N=C ALL
33C RCR 1	31C R= 1	08D ?C GO	1C6 A=A-C S\$X	1D1 ?NC XQ	10E A=C ALL	023 JNC \$+04	19D ?NC XQ
22E C=C+1 ALL	106 A=C S\$X	3A7 ->E92F	388 SETF 0	3B4 ->ED74	388 READ 14(d)	139 ?NC XQ	38C ->E367
22E C=C+1 ALL	264 C=C-1 R<-	2BC RCR 7	144 CLR 6	03B JNC \$+07	01C R= 3	3B0 ->EC4E	225 ?NC XQ
11E A=C MS	2EA ?C\$0 R<-	10E A=C ALL	1A1 ?NC XQ	006 A=0 S\$X	0B2 A>C P-Q	046 70 F	3B8 ->EE89
2FE ?C\$0 MS	11B JNC \$+23	378 READ 13(c)	3B4 ->ED68	130 LDI S\$X	348 WRIT 14(d)	238 READ 8(P)	013 JNC \$+02
01F JC \$+03	13C RCR 8	046 A>C S\$X	043 JNC \$+14	00A 10 J	080 C=M ALL	13C RCR 8	043 JNC \$+14
26E C=C-1 ALL	36A ?A&C R<-	04E A>C ALL	1E3 JNC \$+3C	27D ?NC XQ	268 WRIT 9(0)	106 A=C S\$X	141 ?NC XQ
01E A=0 MS	013 JNC \$+02	2BC RCR 7	308 SETF 1	3B0 ->EC9F	238 READ 8(P)	378 READ 13(c)	3B8 ->EE50
1BE A=A-1 MS	104 CLR 8	070 N=C ALL	2DC R= 13	143 JNC \$+28	1BC RCR 11	03C RCR 3	013 JNC \$+02
03C RCR 3	149 ?NC XQ	03C RCR 3	010 LDPR- 0	259 ?NC XQ	38C ?FSET 0	146 A>A+C S\$X	083 JNC \$+10
0BE A>C MS	024 ->0952	266 C=C-1 S\$X	3D0 LDPR- F	3B0 ->EC96	03F JC \$+07	13C RCR 8	065 ?NC XQ
0CA C=B R<-	278 READ 9(0)	266 C=C-1 S\$X	290 LDPR- A	381 ?NC XQ	244 CLR 9	046 A>C S\$X	3B8 ->EE19
070 N=C ALL	03C RCR 3	106 A=C S\$X	0F2 C>B P-Q	3B0 ->ECE0	25D ?NC XQ	03C RCR 3	013 JNC \$+02
304 CLR 1	106 A=C S\$X	3EE LSHFA ALL	006 A=0 S\$X	30C ?FSET 1	05C ->1797	368 WRIT 13(c)	3AB JNC \$+0P
108 SETF 8	080 C=N ALL	07C RCR 4	1A6 A=A-1 S\$X	123 JNC \$+24	384 CLR 0	278 READ 9(0)	162 A=A-1 PR

## E7 BLOCK

0	1	2	3	4	5	6	7
10A A=C R<-	0A6 A>C S\$X	038 READ 0(T)	343 JNC \$-18	2F0 WRITE DATA	39C R= 0	38D ?NC XQ	01F JC \$+03
0B0 C=N ALL	1C6 A=A-C S\$X	0EE C>B ALL	0B0 C=N ALL	0C6 C=B S\$X	098 C=6 ER,+	008 ->02E3	006 A=0 S\$X
362 ?A&C R	1A6 A=A-1 S\$X	2F0 WRITE DATA	333 JNC \$-1A	226 C=C+1 S\$X	358 ST=C X	226 C=C+1 S\$X	166 A=A+1 S\$X
027 JC \$+04	04E C=0 ALL	2CE ?B\$0 ALL	0B0 C=N ALL	343 JNC \$-0C	198 C=M ALL	106 A=C S\$X	266 C=C-1 S\$X
366 ?A&C S\$X	0C6 C=B S\$X	06B JNC \$+0D	309 ?NC XQ	208 SETF 2	2A0 SETDEC	378 READ 13(c)	3E0 RTN
231 ?NC GO	1BC RCR 11	0B0 C=N ALL	09C ->27C2	205 ?NC XQ	10E A=C ALL	03C RCR 3	149 ?NC XQ
39A ->E68C	130 LDI S\$X	270 RAM SLCT	3C3 JNC \$-08	39C ->E781	356 ?A\$0 XS	146 A>A+C S\$X	024 ->0952
051 ?NC XQ	0C0 192 P	038 READ 0(T)	270 RAM SLCT	2B1 ?NC GO	027 JC \$+04	278 READ 9(0)	278 READ 9(0)
3B8 ->EE14	27A C=C-1 M	2EE ?C\$0 ALL	0E6 C>B S\$X	3AA ->EAAC	JFA LSHFA M	27C RCR 9	27C RCR 9
353 JNC \$-16	0F7 JC \$+1E	01B JNC \$+03	326 ?A<B S\$X	130 LDI S\$X	146 A=A-1 S\$X	306 ?A&C S\$X	106 A=C S\$X
38C ?FSET 0	070 N=C ALL	23E C=C+1 MS	057 JC \$+0A	0F3 243 S	3F3 JNC \$-02	017 JC \$+02	378 READ 13(c)
1E3 JNC \$+3C	166 A=A+1 S\$X	043 JNC \$+08	038 READ 0(T)	39C R= 0	130 LDI S\$X	046 A>C S\$X	03C RCR 3
0B0 C=N ALL	046 A>C S\$X	0EE C>B ALL	23E C=C+1 MS	3D8 C>ST X	003 3 C	0B0 C=N ALL	070 N=C ALL
106 A=C S\$X	106 A=C S\$X	2F0 WRITE DATA	03B JNC \$+07	058 G=C ER,+	146 A>A-C S\$X	1C6 A=A-C S\$X	366 ?A&C S\$X
086 B=A S\$X	270 RAM SLCT	0B0 C=N ALL	04E C=0 ALL	011 ?NC XQ	0AE A>C ALL	01F JC \$+03	347 JC \$-18
2BC RCR 7	02E B=0 ALL	226 C=C+1 S\$X	27E C=C-1 MS	000 ->0004	260 SETHEX	346 ?A\$0 S\$X	006 A=0 S\$X

## E7 BLOCK

8	9	A	B	C	D	E	F
3E0 RTN	366 ?A&C S\$X	10E A=C ALL	329 ?NC XQ	23E C=C+1 MS	158 M=C ALL	046 C=0 S\$X	0B0 C=N ALL
149 ?NC XQ	0CB JNC \$+19	1FD ?NC XQ	0A4 ->29CA	3C3 JNC \$-08	016 A=0 XS	270 RAM SLCT	1BC RCR 11
024 ->0952	270 RAM SLCT	0BC ->2F7F	329 ?NC XQ	046 C=0 S\$X	346 ?A\$0 S\$X	05B JNC \$+0B	0FE C>B MS
09C R= 5	038 READ 0(T)	295 ?NC XQ	0A4 ->29CA	270 RAM SLCT	0B3 JNC \$+1A	066 A>B S\$X	07C RCR 4
3F8 READ 15(e)	10E A=C ALL	0BC ->2F5	2B8 READ 10(t)	0AA A>C R<-	086 B=A S\$X	2B8 READ 10(t)	35C R= 12
052 C=0 P-Q	046 C=0 S\$X	2B8 READ 10(t)	0AA A>C R<-	268 WRIT 9(0)	1FD ?NC XQ	0FC RCR 10	2B8 ?FSET 7
3E8 WRIT 15(e)	270 RAM SLCT	28C ?FSET 7	248 WRIT 10(t)	10A A=C R<-	0BC ->2F7F	0EE C>B ALL	01F JC \$+03
04E C=0 ALL	0AE A>C ALL	31F JC \$-1D	341 ?NC XQ	34D ?NC XQ	2EE ?C\$0 ALL	308 SETF 1	042 C=0 ER
130 LDI S\$X	23E C=C+1 MS	288 SETF 7	0B0 ->20E8	0A4 ->29D3	09B JNC \$+13	225 ?NC XQ	262 C=C-1 ER
0BF 191 ?	0BB JNC \$+11	34B JNC \$-17	01C R= 3	2E5 ?NC XQ	20C ?FSET 2	0AC ->2B89	0E2 C>B ER
226 C=C+1 S\$X	31C R= 1	20C ?FSET 2	139 ?NC XQ	0A4 ->29B9	04B JNC \$+09	01B JNC \$+03	3E0 RTN
284 CLR 7	28C ?FSET 7	067 JC \$+0C	088 ->224E	0AA A>C R<-	080 C=N ALL	295 ?NC XQ	000 NOF
2A8 WRIT 10(t)	013 JNC \$+02	0B0 C=N ALL	2E6 ?C\$0 S\$X	070 N=C ALL	10E A=C ALL	0BC ->2FA5	000 NOF
10E A=C ALL	17C RCR 6	2BC RCR 7	340 ?NC RTN	046 C=0 S\$X	046 C=0 S\$X	278 READ 9(0)	000 NOF
378 READ 13(c)	2EA ?C\$0 R<-	01C R= 3	0D5 ?NC XQ	270 RAM SLCT	08D ?NC XQ	10E A=C ALL	000 NOF
0AE A>C ALL	033 JNC \$+06	10A A=C R<-	088 ->2235	378 READ 13(c)	0BC ->2323	253 JNC \$-36	000 NOF

## E8 BLOCK

0	1	2	3	4	5	6	7
096 150 V 048 ->2A8B	2BC RCR 7 081 ?NC XQ	2BC RCR 7 017 23 W 09C R=	046 A>C S&X				
012 18 R 34C TFSSET 12	070 M=C ALL 3AC ->EB2C	01C R= 3 388 READ 14(d)	238 READ 8(P)				
010 16 P 023 JNC \$+04	0CE C=B ALL 210 LDR- 8	0EA C>B R<- 268 WRIT 9(Q)	23E C=C+1 MS				
017 23 W 3D5 ?NC XQ	13C RCR 8 15C R=	144 CLRF 6 0C1 ?NC XQ	3C7 JC *-08				
000 NOP 088 ->22F5	10A A=C R<- 18C ?FSET 11	141 ?NC XQ 05C ->1730	106 A=C S&X				
188 SETF 11 043 67 C	34D ?NC XQ 01F JC \$+03	38B ->EE50 04E C=0	086 B=A S&X				
013 JNC \$+02	095 ?NC XQ 0A4 ->29B3	222 C=C+1 PR 01B JNC \$+03	130 LDI S&X				
184 CLRF 11 0AA ->2925	06A A>B R<- 222 C=C+1 PR	281 ?NC XQ 0AE A>C	1C6 A=A-C S&X				
309 ?NC XQ 10E A=C ALL	1C9 ?NC XQ 070 N=C ALL	3AA ->EAAC 03C RCR 3	22D ?NC XQ				
088 ->2EC2 13C RCR 8	3B0 ->EC72 07D ?NC XQ	2F9 ?NC XQ 1C6 A=A-C	3B8 ->EF8B				
0CC ?FSET 10 10A A=C R<-	080 C=N ALL 3BC ->EF1F	38B ->EEBE 0AE A>C	190 LDR- 6				
023 JNC \$+04 1ED ?NC XQ	046 A>C S&X 271 ?NC XQ	36B JNC \$-13 0AE A>C	19C R= 11				
3D5 ?NC XQ 018 ->067B	070 N=C ALL 3B8 ->EE9C	37B JNC \$-11 1BC RCR 11	232 C=C+1 P-Q				
088 ->22F5 08E B=A ALL	0E0 SLCT 0 3C1 ?NC XQ	093 147 S 0AE A>C	23A C=C+1 M				
064 106 j 04E C=B ALL 2DC R=	13 39C ->EF70	014 20 T 033 JNC \$+06	070 N=C ALL				
22D ?NC XQ 0CA C=B R<-	080 C=N ALL 013 19 S	1C6 A=A-C S&X 038 READ 0(T)	259 ?NC XQ				

## E8 BLOCK

8	9	A	B	C	D	E	F
3B0 ->EC96 03B JNC \$+07	013 JNC \$+02 1D5 ?NC XQ	0E6 C>B S&X 146 A=A+C S&X	0D0 C=N ALL 014 ->05A1				
279 ?NC XQ 289 ?NC XQ	2F3 JNC \$-22 39C ->E775	22D ?NC XQ 148 SETF 6	31B JNC \$-1D 106 A=C S&X				
3B8 ->EE9E 3BC ->EFA2	259 ?NC XQ 05B JNC \$+08	3BC ->EF8B 284 CLRF 7	3C4 ST=0 046 C=0 S&X				
080 C=N ALL 1B2 A=A-1 P-Q	3B0 ->EC96 098 152 X	150 LDR- 5 066 A>B S&X	19D ?NC XQ 270 RAM SLCT				
03C RCR 3 066 A>C S&X	366 ?A>C 001 1 A	23A C=C+1 M 145 ?NC XQ	38C ->E367 2B8 READ 10(+)				
31C R= 1 1C6 A=A-C S&X	3B8 JNC \$-09 014 20 T	070 N=C ALL 38B ->EE51 3A1 ?NC XQ	05C R= 4				
26A C=C-1 R<- 144 CLRF 6	080 C=N ALL 004 4 D	2E1 ?NC XQ 013 JNC \$+02	080 ->20EB 04A C=0 R<-				
2EA ?C0 0R<- 284 CLRF 7	2B3 JNC \$-2A 017 23 W	3A8 ->EAB8 17B JNC \$+2F	2A8 WRIT 10(+)				
04F JC \$+09 046 A>B S&X	3C4 ST=0 00C ?FSET 3	2F9 ?NC XQ 018 ->067F	378 READ 13(c)				
006 A=0 S&X 141 ?NC XQ	081 129 A 02F JC \$+05	38B ->EEBE 08A B=A R<-	046 A>C S&X				
1A6 A=A-1 S&X 3B8 ->EE50	014 20 T 19D ?NC XQ	013 JNC \$+02 04E C=0 ALL	1C6 A=A-C S&X				
2DC R= 13 01B JNC \$+03	004 4 B 38C ->E367	259 ?NC XQ 013 JNC \$-11	058 G=C PR,+ 01C R= 3				
3D0 LDR- F 2B1 ?NC GO	017 23 W 125 ?NC XQ	3B0 ->EC96 058 ?NC XQ	002 A=0 0R				
3CE RSHFC ALL 3AA ->EAAC	3C4 ST=0 279 ?NC XQ	259 ?NC XQ 3B0 ->EC96	06A A>B R<-				
0F2 C>B P-Q 2F9 ?NC XQ	208 SETF 2 346 ?A00 S&X	2B8 RCR 7 285 ?NC XQ	1C9 ?NC XQ				
148 SETF 6 3B8 ->EEBE	38C ->E367 38A ->E21D	3B0 ->EFA2 13B JNC \$+27	3B0 ->EC72				

## E9 BLOCK

0	1	2	3	4	5	6	7
0B0 C=N ALL 3B0 ->EC4E	1A2 A=A-1 PR 3B0 ->EC4E	0A6 A>C S&X 3A6 ->E9CA	0B0 C=N ALL 0A4 ->29B9				
0A6 A>C S&X 03E 62 >	205 ?C GO 031 49 1 158 M=C ALL	198 C=M ALL 2BC RCR 7	06A A>B R<-				
070 N=C ALL 3B8 JNC \$-0F	39B ->E681 381 ?NC XQ	104 CLRF 8 10A A=C ALL	06E C>B S&X				
145 ?NC XQ 30C TFSSET 1	304 ?NC GO 3AC ->EDE0	366 ?A>C S&X 0B0 C=N ALL	31C R= 1				
3B8 ->EE51 359 ?C GO	38A ->E213 009 ?NC GO	017 JC \$+02 2BC RCR 7	1B2 A=A-1 P-Q				
01B JNC \$+03 3A7 ->E9D6	10E A=C ALL 082 ->2002	108 SETF 8 1A6 A=A-1 S&X	01C R= 3				
2B1 ?NC GO 302 ?A>C PR	0B0 C=N ALL 0B1 ?NC XQ	01E A=C ALL 03B JNC \$+07	2ED ?NC XQ				
3AA ->EAAC 3A9 ?NC GO	1B2 RCR 11 3AC ->E2B	04C ?FSET 4 01C R=	0A4 ->29B9				
004 CLRF 3 38A ->E2EA	0FE C>B MS 023 JNC \$+04	04C ?FSET 4 038 READ 0(T)	3J1 R= 1				
30C ?FSET 1 3EE LSHFA ALL	0B0 C=N ALL 366 ?A>C S&X	05B JNC \$+0B 3D8 C>ST X	172 A=A+1 P-Q				
24D ?C XQ 302 ?A>C PR	04C ?FSET 4 375 ?C GO	389 ?NC XQ 1CA A>A-C R<-	39C R= 0				
3B8 ->E393 057 JC \$+0A	077 JC \$+0E 3A7 ->E9DD	3B0 ->ECE2 148 SETF 6	0E2 C>B 0R				
065 ?NC XQ 1C2 A=A-C PR	0A6 A>C S&X 0CA C=B R<-	28C ?FSET 7 3D8 C>ST X	06E C>B S&X				
3B8 ->EE19 1A2 A=A-1 PR	046 A>C S&X 070 N=C ALL	02B JNC \$+05 3F0 PRPH SLCT	08A B=A R<-				
02B JNC \$+05 3B0 ?C GO	303 ?A>C S&X 381 ?NC XQ	270 RAM SLCT 348 SETF 12	06A A>B R<-				
139 ?NC XQ 3AB ->EACB	043 JNC \$+08 221 ?NC XQ	3AC ->E8E0 08A B=A R<-	058 G=C PR,+ 6				
	3B0 ->ECB8	329 ?NC GO 04C ?FSET 4	083 JNC \$+10 087 JC \$+10	04C ?FSET 4 2E5 ?NC XQ			
		3B0 ->E8E0 2E5 ?NC XQ	2E5 ?NC XQ 0B0 C=N ALL				

## E9 BLOCK

8	9	A	B	C	D	E	F
0EA C>B R<- 3B4 ->EDOC	017 JC \$+02 21D ?NC XQ	08D ?NC XQ 013 JNC \$+02	03D ?NC GO 3AF JC \$-OB				
144 CLRF 6 39C R= 0	208 SETF 2 3B0 ->EC87	08C ->2323 093 JNC \$+12	046 A>C S&X				
1A5 ?NC XQ 098 C=0 PR,+ 3B0 ->EC87	366 ?A>C S&X 043 JNC \$+08	3A6 ->E90F 343 JNC \$-18	106 A=C S&X				
3B8 ->ED99 08D ?NC XQ	083 JNC \$+10 0B0 C=N ALL	065 ?NC XQ 3A8 SETF 6	158 M=C ALL				
093 JNC \$+12 08C ->2323	1A6 A=A-1 S&X 0B6 B=A S&X	3B8 ->EE19 148 SETF 6					
025 ?NC XQ 1AB JNC \$+35	0A6 A>C S&X 01C R= 3	013 JNC \$+02 006 A=0 S&X	079 ?NC XQ				
3B4 ->ED09 21D ?NC XQ	346 ?A00 S&X 16E A=A+1 ALL	3AB JNC \$-0B 166 A=A+1 S&X	3B4 ->ED1E				
359 ?NC XQ 053 JNC \$+0A	389 ?NC XQ 2E2 ?C80 PR	302 ?A>C PR 086 B=A S&X	198 C=M ALL				
044 ->2D66 381 ?NC XQ	380 ->ECE2 023 JNC \$+04	086 B=A S&X 106 A=C S&X					
39C R= 0 3B0 ->ECE0	28C ?FSET 7 033 JNC \$+06	389 ?NC XQ 3B0 ->ECE2	368 JNC \$-13				
098 C=0 PR,+ 15C R= 6	08F JC \$+11 017 JC \$+02	030 ?NC XQ 01E A=C ALL					
08D ?NC XQ 250 LDR- 9	066 A>B S&X 2E2 ?C80 PR	006 A=0 S&X 3B0 ->ECE2					
08C ->2323 15C R= 6	037 JC \$+06 225 ?NC XQ	018 JNC \$+03 166 A=A+1 S&X					
21D ?NC XQ 102 A=C PR	031 ?NC XQ 3B8 ->EE89	099 ?NC GO 056 C=0 XS	288 SETF 7				
3B0 ->EC87 080 C=N ALL	034 JNC \$+10 013 JNC \$+02	056 C=0 XS 288 SETF 7					
031 ?NC XQ 302 ?A>C PR	08C ->2323 0F0 RCR 10	038 ?NC XQ 018 JNC \$+03	079 ?NC XQ				
		3B8 ->EE14 04C ?FSET 4	058 JNC \$+0B 0CE C=B ALL				
		3B8 ->EE50 28C ?FSET 7	31C R= 1				

## EA BLOCK

0	1	2	3	4	5	6	7
232 C=C+1 P=0 013 JNC \$+02	0FC RCR 10	2BC RCR 7	08A B=A R<-	0A4 ->29B8	0A4 ->29D6	038 READ 0(T)	
266 C=C-1 S&X 108 SETF 8	06B JNC \$+0D	10A A=C R<-	2E5 ?FSET 1 X0	37C RCR 12	046 C=0 S&X	04A C=0 R<-	
270 RAM SLCT 3DB C>ST X	2ED ?MC X0	30C ?FSET 1	0A4 ->29B9	06A A>B R<-	08D ?MC X0	2F0 WRITE DATA	
04E C=0 ALL 378 READ 13(c)	044 ->29BB	027 JC \$+04	23C RCR 2	222 C=C+1 ER	08C ->2323	01C R= 3	
09C R= 5 03C RCR 3	3DB C>ST X	0C4 CLRF 10	35C R= 12	0D3 JNC \$+1A	198 C=M ALL	110 LDRR- 4	
310 LDRR- C 106 A=C S&X	084 CLRF 5	0BD ?MC X0	2F2 TC\$0 P=0	198 C=M ALL	10A A=C R<-	01C R= 3	
2F0 WRITE DATA 01C R= 3	3DB C>ST X	08C ->232F	3CB JNC \$+07	0AA A>C R<-	329 ?MC X0	302 ?A<C ER	
139 ?MC X0 080 C=N ALL	08D ?MC X0	398 C=ST X	37E ?ABC MS	269 ?MC X0	0A4 ->29CA	01F JC \$+03	
3B0 ->EC4E 2BC RCR 7	08C ->2323	39C R= 0	10F JC \$+21	08C ->239A	01B JNC \$+03	102 A=C ER	
04D 77 366 ?MC S&X	329 ?MC X0	058 G=C BR,+	302 ?A<C ER	10A A=C R<-	01C R= 3	03B JNC \$+07	
04E C=0 ALL 0AB JNC \$+15	044 ->29CA	2DC R= 13	0FF JC \$+1F	158 M=C ALL	06A A>B R<-	046 A>C S&X	
158 M=C ALL 10A A=C R<-	329 ?MC X0	310 LDRR- C	01C R= 3	10C ?FSET 8	3F5 ?MC X0	266 C=C-1 S&X	
3B8 READ 14(d) 38C ?FSET 0	044 ->29CA	350 LDRR- D	08A B=A R<-	057 JC \$+0A	0A8 ->2AFD	270 RAM SLCT	
2BC RCR 7 02B JNC \$+05	0AE A>C ALL	112 A=C P=0	34D ?MC X0	34D ?MC X0	298 JNC \$-2D	10A A=C R<-	
3DB C>ST X 148 SETF 6	158 M=C ALL	3C4 ST=0	0AA ->29D3	0A4 ->29D3	04D ?MC X0	04E C=0 ALL	
38C ?FSET 0 238 READ 8(P)	080 C=N ALL	01C R= 3	2ED ?MC X0	359 ?MC X0	3B4 ->ED13	2F0 WRITE DATA	

## EA BLOCK

8	9	A	B	C	D	E	F
198 C=M ALL 26E C=C-1 ALL	205 ?MC X0	047 ->11C8	3DB C>ST X	386 RSHFA S&X	2FC RCR 13	070 N=C ALL	
0AA A>C R<- 344 CLRF 12	39C ->E7B1	2CC ?FSET 13	004 CLRF 3	0A6 A>C S&X	2FE TC\$0 MS	03C RCR 3	
269 ?MC X0 20C ?FSET 2	3DD ?MC X0	309 ?C GO	139 ?MC X0	306 ?A<C S&X	3AB JNC \$-0B	266 C=C-1 S&X	
08C ->239A 023 JNC \$+04	38C ->E3F7	01F ->07C2	3B0 ->EC4E	093 JNC \$+12	0CB SETF 10	266 C=C-1 S&X	
158 M=C ALL 31C R= 1	2CC ?FSET 13	265 ?MC X0	03E 62 >	139 ?MC X0	39B JNC \$-0D	02B JNC \$+05	
270 RAM SLCT 190 LDRR- 6	02B JNC \$+05	020 ->0899	3E0 RTN	3B0 ->EC4E	106 A=C S&X	006 A=0 S&X	
39C R= 0 348 SETF 12	10C ?FSET 8	3C1 ?MC GO	084 CLRF 5	031 49 1	JEE LSHFA ALL	1A6 A=A-1 S&X	
098 C=6 BR,+ 2F0 WRITE DATA	01F JC \$+03	002 ->00F0	3DB C>ST X	381 ?MC X0	226 C=C+1 S&X	148 SETF 6	
358 ST=C X 198 C=M ALL	3FD ?MC GO	2B8 READ 10(+)	3AB WRIT 14(d)	3AC ->EBEO	0FC RCR 10	03B JNC \$+07	
038 READ 0(T) 265 ?MC X0	006 ->01FF	05C R= 4	008 SETF 3	29B JNC \$-2D	130 LDI S&X	106 A=C S&X	
31C R= 1 3B0 ->EC99	309 ?MC X0	04A C=0 R<-	3E0 RTN	344 CLRF 12	0C0 192 0	JEE LSHFA ALL	
090 LDRR- 2 204 CLRF 2	0B8 ->2EC2	2AB WRIT 10(+)	10E A=C ALL	0C4 CLRF 10	206 C=C+A S&X	07C RCR 4	
3B0 LDRR- F 104 CLRF 8	3DD ?MC X0	3B8 READ 14(d)	149 ?MC X0	278 READ 9(Q)	2B8 RCR 7	0A6 A>C S&X	
14C ?FSET 6 30C ?FSET 1	38C ->E3F7	3DB C>ST X	024 ->0952	2FE ?C\$0 MS	0CA C=B R<-	1C6 A=A-C S&X	
01F JC \$+03 013 JNC \$+02	18C ?FSET 11	08C ?FSET 5	278 READ 9(Q)	013 JNC \$+02	29C R= 7	144 CLRF 6	
26E C=C-1 ALL 108 SETF 8	321 ?C GO	03F JC \$+07	2BC RCR 7	348 SETF 12	032 B=0 P=0	104 CLRF 8	

## EB BLOCK

0	1	2	3	4	5	6	7
1A1 ?MC X0 225 ?MC X0	3B3 JNC \$-10	012 A=0 P=0	346 ?A\$0 S&X	3A1 ?MC X0	04C ?FSET 4	02F JC \$+05	
3B4 ->ED68 3B8 ->EE89	10E A=C ALL	172 A=A+1 P=0	017 JC \$+02	088 ->22E8	3E5 ?MC X0	302 ?A<C ER	
013 JNC \$+02 013 JNC \$+02	0B0 C=N ALL	1C6 A=A-C S&X	1BE A=A-1 MS	13D ?MC X0	0A8 ->2AF9	3A7 JC \$-0C	
10B SETF 8 0CE C=B ALL	23B JNC \$-39	362 ?A&C BR	3F3 JNC \$-02	080 C=N ALL	3B0 ->EC4F	0A6 A>C ALL	013 JNC \$+02
2BC RCR 7 2B8 READ 10(+)	02F JC \$+05	146 A=A+C S&X	0B2 A>C P=0	02A 42 *	0FO C>N ALL	00E A=0 ALL	
10E A=C ALL 29C R= 7	366 ?A&C S&X	346 ?A\$0 S&X	15C R= 6	3ED ?MC GO	10E A=C ALL	04E C=0 ALL	
2B8 READ 10(+) OF2 C>B P=0	01F JC \$+03	01F JC \$+03	3E0 RTN	08A ->22FB	139 ?MC X0	270 RAM SLCT	
05C R= 4 141 ?MC X0	0CA C=B R<-	1B2 A=A-1 P=0	087 135 6	14C ?FSET 6	088 ->224E	238 READ B(F)	
04A A>C R<- 3B8 ->EE50	243 JNC \$-38	053 JNC \$+0A	012 18 R	04D ?C GO	2E6 ?C\$0 S&X	0FC RCR 10	
2A8 WRIT 10(+) 01B JNC \$+03	051 ?MC X0	130 LDI S&X	00D 13 M	3A3 ->EB13	05B JNC \$+0B	0A6 A>C R<-	
259 ?MC X0 0C9 ?MC GO	3B8 ->EE14	007 7 G	0CC ?FSET 10	141 ?MC X0	0D5 ?MC X0	07C RCR 4	
3B0 ->EC96 00A ->0232	32B JNC \$-1B	1C6 A=A-C S&X	02F JC \$+05	044 ->2950	088 ->2235	228 WRIT B(F)	
10C ?FSET 8 065 ?MC X0	046 A>C S&X	01F JC \$+03	2C9 ?MC X0	2CC ?FSET 13	080 C=N ALL	3C4 ST=0	
3B1 ?MC X0 3B8 ->EE19	130 LDI S&X	17E A=A+1 MS	3BC ->EFB2	037 JC \$+06	306 ?A<C S&X	2E1 ?MC X0	
3B0 ->ECEO 013 JNC \$+02	070 112 P	3EB JNC \$-03	08C ?FSET 5	3B8 READ 14(d)	3C7 JC \$-08	3A8 ->EAB8	
	19C R= 11	146 A=A+C S&X	047 JC \$+08	358 ST=C X	366 ?A&C S&X	0B0 C=N ALL	

## EB BLOCK

8	9	A	B	C	D	E	F
0E6 C>B ALL 24D ?MC X0	3B0 ?MC X0	262 C=C-1 ER	130 LDI S&X	220 544	2E5 ?MC X0	32C ?FI 1	
3B8 SETF 0 3B8 ->E393	01C ->07EF	097 JC \$+12	004 4 D	38C ?FSET 0	3B0 ->ECB9	3F7 JC \$-02	
308 SETF 1 065 ?MC X0	014 20 T	262 C=C-1 ER	033 JNC \$+06	21D ?C X0	028 WRIT 0(T)	149 ?MC GO	
01C R= 3 3B8 ->EE19	019 25 Y	09F JC \$+13	130 LDI S&X	3B1 ->EC87	0A8 WRIT 2(Y)	026 ->0952	
3A9 ?MC GO 013 JNC \$+02	010 16 P	388 SETF 0	013 19 S	38C ?FSET 0	328 WRIT 12(b)	198 C=M ALL	
3A2 ->EBEA 3A3 JNC \$-0C	130 LDI S&X	01B JNC \$+03	259 ?MC X0	268 WRIT 9(D)	06E A>B ALL		
092 146 R 070 N=C ALL	220 544	010 16 P	130 LDI S&X	380 ->EC96	32C ?FI 1	15C R= 6	
005 5 E 006 A=C S&X	0B0 C=N ALL	08B JNC \$+11	001 1 A	01E A=0 MS	03B JNC \$+07	14A A=A+C R<-	
016 22 V 1A6 A=A-1 S&X	10E A=C ALL	130 LDI S&X	3E8 WRIT 15(e)	3A1 ?MC X0	226 C=C+1 S&X	2B8 RCR 7	
000 NOP 104 CLRF 8	15C R= 6	037 55 7	30C ?FSET 1	014 ->0SEB	02F JC \$+05	14A A=A+C R<-	
20D ?MC X0 1A1 ?MC X0	150 LDRR- 5	3E8 WRIT 15(e)	09F JC \$+13	259 ?MC X0	160 ?LOWBAT	06E A>B ALL	
3B8 ->EE83 3B4 ->ED68	15C R= 6	308 SETF 1	3B0 ?MC X0	38C ->E396	3CF JC \$-07	3E0 RTN	
01B JNC \$+03 013 JNC \$+02	242 C=A-C ER	0D0 LDRR- 3	01C ->07EF	20B JNC \$-3F	368 WRIT 13(c)	000 NOP	
2B1 ?MC GO 363 JNC \$-14	05F JC \$+0B	15C R= 6	020 32 T	3D0 ?MC X0	3C3 JNC \$-08	000 NOP	
3A4 ->EAAC 3C1 ?MC X0	262 C=C-1 ER	242 C=A-C ER	014 20 T	0AC ->2BF7	328 WRIT 12(b)	000 NOP	
3C4 ST=0 0B0 ->2CF0	08F JC \$+11	3B3 JNC \$-0A	012 18 R	3TB JNC \$-05	268 WRIT 9(D)	000 NOP	

## EC BLOCK

	0	1	2	3	4	5	6	7
10C 268	L 008	8 H	014 20	T 00F 15	O 009 9	I 00D 13	M 01A 26	Z 01B 260
00F 15	W 00B	11 K	009 15	I 00D 13	P 010 272	R 005 32	E 012 18	X 013 23A
017 23	W 013	19 S	00E 14	N 012 18	O 005 5	R 005 5	R 012 18	Q 020 330
020 32	B 015	21 M	10D 269	M 00F 15	O 012 20	T 005 5	R 012 18	W 013 170
002 2	B 00D	13 M	269	N 014 20	R 005 5	E 012 18	R 012 18	R 014 180
001 1	A 020	32 E	007 7	G 005 5	T 005 5	E 012 18	R 012 18	S 015 330
014 20	T 005	5 E	020 32	G 003 3	C 117	279 W	R 015 6	C 014 170
103 259	C 012	18 R	005 5	E 014 20	T 00F 15	O 105 12	R 016 6	C 014 23A
001 1	A 012	18 R	005	R 005 5	E 00F 15	R 105	P 017 12	C 014 23A
012 18	R 10D	269 M	012 18	R 005 5	E 012 18	R 105	R 018 12	A 014 170
004 4	D 001	1 A	012 18	R 004 4	D 008 11	K 009 9	R 019 6	C 014 390
020 32	D 00C	12 L	10E 270	N 103 259	C 009 9	I 010 14	R 020 105	C 014 310
005 5	E 006	6 F	00F 15	O 001 1	A 00E 14	N 011 6	R 021 105	R 015 370
012 18	R 015	21 F	020 32	R 012 18	R 007 7	R 004 6	R 022 105	C 014 304
012 18	R 00E	14 N	012 18	R 004 4	D 104	CLRF 8	R 023 105	C 014 204
103 259	C 003	3 C	00F 15	D 0	180 POP	ADR	R 024 106	C 014 26E

## EC BLOCK

	8	9	A	B	C	D	E	F
1E6 C=C+C	SIX	266 C=C-1	SIX	306 ?ACK	SIX	14C ?FSET	6	270 RAM
1E6 C=C+C	SIX	106 A=C	SIX	340 ?NC RTN	01F JC	*+03	SLCT	07E A>B
1E6 C=C+C	SIX	080 C=N	ALL	046 A>C	SIX	266 C=C-1	SIX	MS 288 SETF
046 A>C	SIX	1BC RCR	11	270 RAM	SLCT	106 A=C	SIX	7 1A6 A=A-1
1C6 A=A-C	SIX	056 C=0	XS	226 C=C+1	SIX	226 C=C+1	SIX	SIX
126 A=A+B	SIX	3E0 RTN	046 A>C	SIX	106 A=C	SIX	037 JC	*+06 1A6 A=A-1
3E0 RTN	080 C=N	ALL	0EE C>B	ALL	270 RAM	SLCT	17E A=A+1	MS 130 LDI
080 C=N	ALL	03C RCR	3	270 WRITE DATA	038 READ	0(T)	3D4 R=R-1	SIX 288 READ 10(+)
03C RCR	3	JCB JNC	*+07	0EE C>B	ALL	17E A=A+1	MS 3D4 R=R-1	1C6 A=A-C
3C6 RSHFC	SIX	106 A=C	SIX	3F0 PRPH	SLCT	106 A=C	SIX	SIX 28C ?FSET 7
33C RCR	1	046 C=0	SIX	3F0 PRPH	SLCT	09E B-A	MS 013 JNC	01F JC
1E6 C=C+C	SIX	270 RAM	SLCT	270 RAM	SLCT	106 A=C	SIX	*+02 01F JC
1F6 C=C+C	XS	378 READ	13(c)	046 A>C	SIX	130 LDI	SIX	094 R=R-5
1F6 C=C+C	XS	046 A>C	SIX	130 LDI	SIX	046 A>C	SIX	094 R=R-5
013 JNC	*+02	368 WRIT	13(c)	2DE ?B#0	MS	3F0 PRPH	SLCT	146 A=A+C
013 JNC	*+02	02E B=0	ALL	3E0 RTN	038 READ	0(T)	2D3 JNC	146 A=A+C

## ED BLOCK

	0	1	2	3	4	5	6	7
094 R=R=	5	0AA A>C	R<-	08A B=A	R<-	01C R=	3	2F0 WRITE DATA
01B JNC	*+03	1CA A=A-C	R<-	2E6 ?C#0	SIX	2E6 ?NC XQ	0CE C=B	052 C=0
098 C=B	R=R,+	3E0 RTN	04B JNC	*+09	0A4 ->29BB	1A6 A=A-1	SIX	P-Q 048 SETF
10E A=C	ALL	0AE A>C	ALL	2E5 ?NC XQ	23C RCR	2	2F0 WRITE DATA	180 POP ADR
3B0 C=C AND A	10E A=C	ALL	0A4 ->29B9	28C ?FSET 7	03B JNC	*+07	3E0 RTN	28C ?FSET 7
2EE ?C#0	ALL	270 RAM	SLCT	33C RCR	1	037 JC	*+06	0E2 C>B
340 ?NC RTN	07C RCR	4	27E C=C-1	MS	27E C=C-1	MS	096 150 V	284 CLRF 7
288 SETF	7	31C R=	1	037 JC	*+06	027 JC	*+04	3B8 ->EE56
3E0 RTN	27E C=C-1	MS	329 ?NC XQ	359 ?NC XQ	04E C=0	ALL	328 WRIT 12(b)	3B8 ->EE10
21D ?NC XQ	360 TC RTN	0A4 ->29CA	0A4 ->29D6	0A4 ->29D6	2F0 WRITE DATA	288 SETF	7	35C R=
3B0 ->EC87	27E C=C-1	MS	3E3 JNC	*+04	3E3 JNC	*+04	013 JNC	*+02
1A6 A=A-1	SIX	3DC R=R+1	359 ?NC XQ	06A A>B	R<-	270 RAM	SLCT	042 C=0
3E6 LSHFA	ALL	3DC R=R+1	0AA ->29D6	040 ?NC XQ	07C RCR	4	368 WRIT 13(3)	0R ->ED54
01C R=	3	3DB JNC	*+05	06A A>B	R<-	3B4 ->ED13	39C R=	038 READ O(T)
080 C=N	ALL	02D ?NC XQ	31C R=	1	038 READ	0(T)	0	027 JC
2RC RCR	7	3B4 ->ED0B	1B2 A=A-1	P-Q	04A C=0	R<-	32C ?FI	*+04

## ED BLOCK

	8	9	A	B	C	D	E	F
3CB JNC	*-07	046 C=0	SIX	1BC RCR	11	346 ?A#0	SIX	17E A=A+1 MS
0B2 A>C	P-Q	3F0 PRPH	SLCT	10A A=C	R<-	053 JNC	*+0A	17E A=A+1 MS
158 M=C	ALL	07E A>B	MS	080 C=N	ALL	1A6 A=A-1	SIX	266 C=C-1 SIX
3D1 ?NC XQ	09E B=A	MS	106 A=C	SIX	0A6 A>C	SIX	3D2 R=R-1	158 M=C ALL
3AC ->EBF4	0A6 A>C	SIX	130 LDI	SIX	1E6 C=C+C	SIX	038 READ	0(T) 35C R=
19C R=	11	106 A=C	SIX	070 112 P	33C RCR	1	23C RCR	2 12
10C ?FSET	8	35E ?A#0	MS	1C6 A=A-C	SIX	11E A=C MS	3D3 JNC	041 ?NC GO
043 JNC	*+08	36D ?NC GO	3FB JNC	*-01	33E ?A>B	MS	042 C=0	3B0 ->ECB9
00C ?FSET	3	3B6 ->EDDB	146 A=A+C	SIX	013 JNC	*+02	328 WRIT 12(a)	044 CLRF 4
037 JC	*+06	270 RAM	SLCT	346 ?A#0	SIX	008 SETF 3	038 READ 0(T) 328 WRIT 11(a)	044 CLRF 4
0C2 C=B	R=R	10C ?FSET	8	08B JNC	*+11	07E A>B MS	062 C=C-1	045 ?NC XQ
262 C=C-1	R=R	11B JNC	*+23	130 LDI	SIX	0AA A>C R<-	082 A>C P-Q	046 CLRF 5
38D ?NC GO	2C2 ?B#0	R=R	007 7 G	03C RCR	3	04C ?FSET 4	027 JC *+04	047 ?NC XQ
3B7 ->EDE3	10F JC	*+21	1C6 A=A-C SIX	10A A=C R<-	01F JC	*+03	028 ?FSET 5 048 SETF 4	048 SETF 4
0E2 C>B	R=R	044 CLR	4	3FB JNC	*-01	198 C=M ALL	029 ?FSET 5 049 SETF 4	049 SETF 4
004 CLR	3	OAA A>C	R<-	146 A=A+C	SIX	210 C=C+1 R=	030 ?FSET 5 050 ?FSET 5	050 ?FSET 5

## EE BLOCK

0	1	2	3	4	5	6	7
36A ?ABC R<- 139 ?NC XQ	028 WRIT 0(T) 028 READ 0(T)	210 LDR- 8	004 CLRF 3	3D8 C>ST X	027 JC &+04		
037 JC &+06 3B0 ->EC4E	15C R= 6 2E2 ?C#0	1E8 WRIT 7(0)	2E5 ?NC XQ	3AB WRIT 14(d)	22A C=C11 R<-		
28C ?FSET 7 023 35 #	310 LDR- C 048 JNC &+09	32C ?FI 1	3B0 ->ECB9	171 ?NC XQ	057 JC &+0A		
159 ?C XQ 3B3 JNC &-06	110 LDR- 4 042 A>C	360 ?C RTN	184 CLRF 11	01C ->075C	3C3 JNC &-08		
3B0 ->EE56 139 ?NC XQ	1D0 LDR- 7 302 ?ACC	268 WRIT 9(0)	160 ?LOWBAT	259 ?NC XQ	00C ?FSET 3		
000 NOP 3B0 ->EC4E	112 A=C P-Q 033 JNC &+06	32C ?FI 1	093 JNC &+12	38C ->E396	077 JC &+0E		
088 JNC &+11 00E 14 N	15C R= 6 042 A>C	028 JNC &+05	32B WRIT 12(b)	0C3 JNC &+18	34D ?NC XQ		
28C ?FSET 7 381 ?NC GO	0E8 WRIT 3(X) JEE LSHFA	ALL	160 ?LOWBAT	04E C=0 ALL	38B ->E2D3		
159 ?C GO 3AE ->EBEO	160 ?LOWBAT	0EA C>B R<-	037 JC &+06	139 ?NC XQ	05C R= 4	02B JNC &+05	
3BB ->EE56 0E0 SLCT Q	16F JC &+2D 0CA C=B	R<-	266 C=C-1 S#X	3B0 ->EC4E	250 LDR- 9	265 ?NC XQ	
139 ?NC XQ 2DC R= 13	2E8 WRIT 11(a) JEO RTN	3B8 JNC &-09	006 6 F	05C R= 4	020 ->0899		
3B0 ->EC4E 0AO SLCT P	32C ?FI 1 051 ?NC XQ	32B WRIT 12(b)	265 ?NC XQ	268 WRIT 9(0)	2AB JNC &-2B		
018 24 X 0F9 ?NC XQ	023 JNC &+04 3B8 ->EE14	1B0 POP ADR	020 ->0899	32C ?FI 1	188 SETF 11		
3B1 ?NC XQ 3B8 ->EE3E	266 C=C-1 S#X 1B8 JNC &+27	21B JNC &-3D	3B8 READ 14(d)	360 ?C RTN	2C4 CLRF 13		
JAC ->EBEO 235 ?NC XQ	3D3 JNC &-06 368 WRIT 13(c)	1B0 POP ADR	3D8 C>ST X	3C8 CLRKEY	381 ?NC XQ		
173 JNC &+2E 3B0 ->E3BD	063 JNC &+0C 21C R= 2	03B JNC &+07	148 SETF 6	3CC ?KEY	3AC ->EBEO		

## EE BLOCK

B	C	A	D	E	F
1B0 POP ADR	0B0 C=N ALL	020 ->0899	006 6 F	3B0 ->ECAA	221 ?NC XQ
23A C=C1 M	1B8 RCR 11	3D9 ?NC XQ	220 544	0B0 C=N ALL	04E C=0 ALL
1E0 GOTO ADR	056 C=0 XS	01C ->07F6	01E A=0 MS	024 ->0952	38C ->E388
139 ?NC XQ	066 A>B S#X	3B0 ?NC XQ	066 A>B S#X	15C R= 6	158 M=C ALL
3B0 ->EC4E	366 ?ABC S#X	01C ->07EF	3A1 ?NC XQ	3B8 READ 14(d)	046 C=0 S#X
03E 62 >	35B JNC &-15	012 18 R	014 ->05EB	025 ?NC XQ	160 ?LOWBAT
261 ?NC XQ	3A3 JNC &-0C	004 4 D	149 ?NC GO	3B0 ->ECB9	159 ?C GO
000 ->0098	0B0 C=N ALL	019 25 Y	026 ->0952	38C ->E390	38B ->EE56
3B8 JNC &-0F	1B8 RCR 11	220 544	028 WRIT 0(T)	068 WRIT 1(Z)	2E8 WRIT 11(a)
006 A=0 S#X	056 C=0 XS	01E A=0 MS	139 ?NC XQ	068 WRIT 1(Z)	022 B=0 BR
166 A=A1 S#X	066 A>B S#X	3A1 ?NC XQ	3B0 ->EC4E	028 WRIT 1(Z)	3C2 ?FI 1
086 B=A S#X	01B JNC &+03	014 ->05EB	28C RCR 7	022 B=0 BR	027 JC &+04
389 ?NC XQ	21B ?NC XQ	034 58 :	033 JNC &+06	168 WRIT 5(M)	226 C=C1 S#X
3B0 ->ECE2	3B0 ->EC87	035 ?NC GO	2F0 WRITE DATA	32C ?FI 1	03F JC &+07
28C ?FSET 7	0E6 C>B S#X	01C ->07EF	036 ?NC XQ	0B0 C=N ALL	0E2 C>B BR
043 JNC &+08	265 ?NC XQ	020 32	2F0 WRITE DATA	28C RCR 7	3CB JNC &-07
	00F 15 0	2A9 ?NC XQ	2F0 WRITE DATA	01B JNC &+03	01B JNC &+03
			2CB JNC &-27	03F JC &+07	

## EF BLOCK

0	1	2	3	4	5	6	7
0E2 C>B BR	2E8 WRIT 11(a)	048 SETF 4	37C RCR 12	0BC RCR 5	288 SETF 7	01C R= 3	31C R= 1
198 C=M ALL	32C ?FI 1	0B0 C=N ALL	051 ?NC XQ	3D8 C>ST X	00E A=0 ALL	10A A=C R<-	2EA ?C#0 R<-
2F0 WRITE DATA	3F7 JC &-02	00E A=0 ALL	0AC ->2B14	04C ?FSET 4	16E A=A1 ALL	13C RCR 8	023 JNC &+04
2BC RCR 7	381 ?NC XQ	01C R= 3	0B0 C=N ALL	02F JC &+05	149 ?NC XQ	262 C=C-1 BR	01C R= 3
2F0 WRITE DATA	3AC ->EBEO	2E2 ?C#0 BR	2BC RCR 7	048 SETF 4	024 ->0952	027 JC &+04	07D ?NC XQ
3B8 JNC &-1F	28C ?FSET 7	0C3 JNC &+18	0EA C>B R<-	3D8 C>ST X	3B8 READ 14(d)	359 ?NC XQ	0AC ->2B1F
0CE C=B ALL	2B1 ?C GO	2BC RCR 7	06A A>B R<-	22E C=C1 ALL	1BC RCR 11	0A4 ->29D6	198 C=M ALL
2BC RCR 7	3AB ->EAAAC	104 A=C R<-	1C9 ?NC XQ	01B JNC &+03	3B0 C=C AND A	3E3 JNC &-04	01C R= 3
2F0 WRITE DATA	0B0 C=N ALL	0B0 C=N ALL	3B0 ->EC72	044 CLRF 4	10E A=C ALL	198 C=M ALL	306 ?A'C S#X
046 C=0 S#X	2BC RCR 7	262 C=C-1 BR	0AE A>C ALL	3D8 C>ST X	153 JNC &+2A	07C RCR 4	02F JC &+05
2E8 WRIT 11(a)	0A6 A>C S#X	027 JC &+04	0FC RCR 10	27C RCR 9	1BC RCR 11	0AA A>C R<-	366 ?A'C S#X
32C ?FI 1	2BC RCR 7	329 ?NC XQ	0AE A>C ALL	070 N=C ALL	24E C=C-1 ALL	10A A=C R<-	377 JC &-12
027 JC &+04	3E0 RTN	0A4 ->29CA	0B0 C=N ALL	21D ?NC XQ	2FC RCR 13	0FC RCR 10	302 ?A'C BR
226 C=C1 S#X	041 ?NC GO	3E3 JNC &-04	05C R= 4	3B0 ->EC87	158 M=C ALL	158 M=C ALL	363 JNC &-14
3E3 JNC &-04	3B8 ->EE10	2ED ?NC XQ	042 A>C BR	366 ?ABC S#X	0B0 C=N ALL	2E5 ?NC XQ	0EA C>B R<-
073 JNC &+0E	284 CLRF 7	0A4 ->29BB	070 N=C ALL	05F JC &+0B	2BC RCR 7	0A4 ->29B9	07C RCR 4

## EF BLOCK

8	9	A	B	C	D	E	F
10A A=C R<-	106 A=C S#X	15C R= 6	3EE LSHFA	000 NOP	0FB JNC &+1F	14C ?FSET 6	3AC ->EBEO
1C9 ?NC XQ	3EE LSHFA	ALL	3E0 RTN	000 NOP	3D9 ?NC XQ	043 JNC &+08	0EE C>B ALL
3B0 ->EC72	3EE LSHFA	ALL	259 ?NC XQ	000 NOP	01C ->07F6	139 ?NC XQ	3CD ?NC GO
01C R= 3	356 ?A#0 XS	3B0 ->EC96	044 ->2925	000 NOP	0B8 READ 2(Y)	3B0 ->EC4E	09E ->2F3
0B0 C=N ALL	013 JNC &+02	05E C=0 MS	13C RCR 8	000 NOP	119 ?NC XQ	006 6 F	000 NOP
0AE A>C ALL	17A A=A1 M	27E C=C-1 MS	070 N=C ALL	000 NOP	024 ->0952	259 ?NC XQ	000 NOP
1BC RCR 11	0AE A>C ALL	366 ?ABC S#X	10A A=C R<-	000 NOP	3D9 ?NC XQ	38C ->E396	3C3 JNC &-08
102 A=C BR	2FC RCR 13	017 JC &+02	34D ?NC XQ	000 NOP	1BC RCR 12	38C ->E396	3C3 JNC &-08
0AE A>C ALL	0C6 C=B S#X	0B0 C=N ALL	0A4 ->29D3	000 NOP	239 ?NC XQ	002 ->00F1	29B JNC &-2D
070 N=C ALL	2BC RCR 7	35C R= 12	2ED ?NC XQ	000 NOP	00C ->038E	00C ?FSET 3	000 NOP
3E0 RTN	29C R= 7	3CE RSHFC	0A4 ->29BB	000 NOP	23C RCR 2	01D ?C GO	000 NOP
04E C=0 ALL	112 A=C P-Q	0F2 C>B P-Q	3D8 C>ST X	0EE C>B ALL	3D8 C>ST X	3A3 ->E007	004 4 I
0E0 SLCT Q	1BC RCR 11	0B0 C=N ALL	3E0 RTN	2E5 ?NC XQ	30C ?FSET 1	389 ?NC GO	031 49 1
2DC R= 13	11E A=C MS	2BC RCR 7	000 NOP	3B0 ->ECB9	3B0 ?C GO	342 ->E8E2	012 18 R
0AO SLCT P	1BE A=A-1 MS	1A6 A=C-1 S#X	000 NOP	268 WRIT 9(0)	0J8 ->0EEF	0EE C>B ALL	003 3 C
0A6 A>C S#X	0AE A>C ALL	31C R= 1	000 NOP	32C ?FI 1	3D8 C>ST X	381 ?NC XQ	03D 61 =

## E0 BLOCK

## HP41 LIGHT MAND (VERSION 1E) DIS-ASSEMBLER LISTING 5-AUG-81

	0	1	2	3	4	5	6	7
01B	27	E 000 0 0	10E A=C ALL	08C ?FSET 5	210 LDR- 8	1EA C=C+C R-	017 JC	\$+02 033 JNC
007	7	G 000 0 0	05C R= 4	057 JC \$+0A	316 ?A+C XS	0A2 A>C BR	084 CLRF 5	0AE A>C ALL
008	8	H 149 ?NC XQ	33C RCR 1	14C ?FSET 6	083 JNC \$+10	11B JNC \$+23	00C ?FSET 3	31C R= 1
0A4	164	\$ 024 ->0952	3D4 R=R-1	047 JC \$+08	21C R= 2	0AE A>C ALL	017 JC \$+02	050 LDR- 1
00C	12	L 388 READ 14(d)	202 C=C+A BR	391 ?NC XQ	150 LDR- 5	07C RCR 4	044 CLRF 4	OAE A>C ALL
010	16	P 33C RCR 1	013 JNC \$+02	08C ->23E4	316 ?A+C XS	31C R= 1	3D8 C>ST X	16B JNC \$+2D
00C	12	L 358 ST=C X	222 C=C+1 BR	06C 108 1	393 JNC \$-0E	10E A=C ALL	31C R= 1	362 ?A+C BR
02D	45	- 044 CLRF 4	214 ?R= 2	00A 10 J	21C R= 2	3D0 LDR- F	037 JC \$+06	037 JC \$+06
00C	12	L 398 C=ST X	3D3 JNC \$-06	389 ?NC XQ	050 LDR- 1	3D8 C>ST X	21C R= 2	247 JC \$-38
095	149	L 26C RCR 13	0AE A>C ALL	08C ->23E2	376 ?A+C XS	38C ?FSET 0	39C R= 0	110 LDR- 4
00C	12	L 348 WRIT 14(d)	03C RCR 3	345 933 Z	047 JC \$+08	017 JC \$+02	016 A=0 XS	3D4 R=R- 1
0AD	173	- 05E C=0 MS	362 ?A+C BR	369 ?NC XQ	0A2 A>C BR	284 CLRF 7	00C ?FSET 3	2D0 LDR- B
005	5	E 23E C=C+1 MS	093 JNC \$+12	03C ->0FDA	33C RCR 1	30C ?FSET 1	0C7 JC \$+18	3C3 JNC \$-08
0BE	190	> 37E ?A+C MS	391 ?NC XQ	09B 155 [	042 C=0 BR	017 JC \$+02	130 LDI S&X	222 C=C+1 BR
204	516	D 1AB JNC \$+35	08C ->23E4	2FC RCR 13	1EA C=C+C R-	144 CLRF 6	00D 13 M	0EF JC \$+1D
002	2	B 0AE A>C ALL	2F8 760 X	0AE A>C ALL	20C ?FSET 2	302 ?A+C BR	21C R= 2	

## E0 BLOCK

	8	9	A	B	C	D	E	F
110	LDR- 4	02E 46 .	211 ?NC GO	08C ?FSET 5	184 388 D	J1C R= 1	042 66 B	098 C=G BR,+
3D4	R=R-1	3D3 JNC \$-06	006 ->0184	023 JNC \$+04	0C6 C=B S&X	30A ?A+C R-	040 64 B	158 M=C ALL
150	LDR- 5	222 C=C+1 BR	01C R= 3	369 ?NC XQ	39C R= 0	0EB JNC \$+1D	000 0 B	39D ?NC XQ
38B	JNC \$-0F	362 ?A+C BR	0AA A>C R-	03C ->0FDA	058 B=C BR,+	130 LDI S&X	041 65 A	1BC ->6FE7
130	LDI S&X	03B JNC \$+07	00E A=0 ALL	1B1 433 1	28C ?FSET 7	025 37 %	000 0 B	241 ?NC XQ
00A	10 J	222 C=C+1 BR	0AA A>C R-	388 READ 14(d)	04B JNC \$+09	30A ?A+C R-	043 67 C	00C ->0390
302	?A+C BR	362 ?A+C BR	31C R= 1	358 ST=C X	391 ?NC XQ	0CF JC \$+19	04E C=0 ALL	288 SETF 7
033	JNC \$+06	023 JNC \$+04	08E B=A ALL	244 CLRF 9	08C ->23E4	1C6 A=A-C S&X	0AA A>C R-	398 C=ST X
31C	R= 1	222 C=C+1 BR	130 LDI S&X	056 C=0 XS	3AF 943 /	379 ?NC XQ	18C RCR 11	3AB WRIT 14(d)
0D0	LDR- 3	362 ?A+C BR	0C8 200 H	376 ?A+C XS	0CE C=B /	03C ->0FDE	11A A=C M	171 ?NC XQ
0A2	A>C BR	2F3 JNC \$+22	36A ?A+C R-	09B JNC \$+13	056 C=0 XS	0E6 230 r	1B0 POP ADR	01C ->075C
236	C=C+1 XS	391 ?NC XQ	02F JC \$+05	236 C=C+1 XS	241 ?NC GO	04C 76 L	21A C=C+A M	198 C=M ALL
343	JNC \$-18	08C ->23E4	388 READ 14(d)	376 ?A+C XS	032 ->0C90	000 0 B	330 FETCH S&X	0EE C>B ALL
362	?A+C BR	3B3 947 3	358 ST=C X	023 JNC \$+04	18B JNC \$+31	000 0 B	2E6 ?C=0 S&X	24B JNC \$-37
027	JC \$+04	388 READ 14(d)	321 ?NC GO	369 ?NC XQ	130 LDI S&X	000 0 B	1A7 JC \$+34	3B5 ?NC XQ
130	LDI S&X	358 ST=C X	046 ->11C8	03C ->0FDA	030 48 0	000 0 B	39C R= 0	08C ->23ED

## E1 BLOCK

	0	1	2	3	4	5	6	7
3B5	949	5 04D 77 #	02B 43 +	36A ?A+C R-	130 LDI S&X	00C 12 L	2B8 READ 10(+)	26B JNC \$-33
063	JNC \$+0C	30A ?A+C R-	2DB JNC \$-25	027 JC \$+04	00B 11 K	00E 14 N	03C RCR 3	130 LDI S&X
087	135 G	11B JNC \$+23	0BB JNC \$+17	130 LDI S&X	36A ?A+C R-	005 5 E	10E A=C ALL	0C5 197 E
09A	154 Z	266 C=-1 S&X	226 C=C+1 S&X	02F 47 /	01F JC \$+03	000 0 B	265 ?NC GO	1BC RCR 11
09B	155 L	36A ?A+C R-	36A ?A+C R-	3D3 JNC \$-06	02E B=0 ALL	130 LDI S&X	036 ->0D99	13D ?NC GO
07E	126 "	037 JC \$+06	027 JC \$+04	130 LDI S&X	2A3 JNC \$-2C	00E 14 N	130 LDI S&X	04E ->134F
088	136 H	130 LDI S&X	130 LDI S&X	01D 29 J	391 ?NC XQ	36A ?A+C R-	00C 12 L	253 JNC \$-36
040	64 B	025 37 Z	02D 45 -	30A ?A+C R-	08C ->23E4	103 JNC \$+20	36A ?A+C R-	3B8 READ 14(d)
041	65 A	323 JNC \$-1C	243 JNC \$-2C	30F JC \$-1F	3AF 943 /	130 LDI S&X	027 JC \$+04	17C RCR 6
042	66 B	323 JNC \$-1C	226 C=C+1 S&X	391 ?NC XQ	066 A>B S&X	001 1 A	130 LDI S&X	3D8 C>ST X
043	67 C	133 JNC \$+26	36A ?A+C R-	08C ->23E4	3B5 ?NC XQ	36A ?A+C R-	0C4 196 D	04C FSET 4
04C	76 L	130 LDI S&X	027 JC \$+04	3AF 943 /	08C ->23ED	057 JC \$+0A	043 JNC \$+08	01F JC \$+03
000	0 B	040 64 B	130 LDI S&X	0CE C=B ALL	3B5 949 5	130 LDI S&X	226 C=C+1 S&X	048 SETF 4
28C	?FSET 7	36A ?A+C R-	02A 42 *	056 C=0 XS	03B JNC \$+07	007 7 G	36A ?A+C R-	013 JNC \$+02
13B	JNC \$+27	02F JC \$+05	273 JNC \$+32	24D ?NC GO	007 7 G	39C R= 0	018 JNC \$+03	044 CLRF 4
130	LDI S&X	130 LDI S&X	226 C=C+1 S&X	032 ->0C93	008 8 H	058 G=C BR,+	046 A>C S&X	3D8 C>ST X

## E1 BLOCK

	8	9	A	B	C	D	E	F
13C	RCR 8	013 JNC \$+02	05C R= 4	03A ->0EA0	236 C=C+1 XS	28C ?FSET 7	350 LDR- D	088 SETF 5
34B	WRIT 14(d)	1C3 JNC \$+38	390 LDR- E	2B8 READ 10(+)	376 ?A+C XS	3C7 JC \$-08	11A A=C M	05E C=0 MS
181	?NC GO	01C R= 3	010 LDR- 0	03C RCR 3	053 JNC \$+0A	3C4 ST=0	1B0 POP ADR	0AB JNC \$+15
006	->0160	290 LDR- A	0EE C>B ALL	056 C=0 XS	236 C=C+1 XS	148 SETF 6	37A ?A+C M	14B JNC \$+29
21C	R= 2	210 LDR- 8	046 C=0 S&X	0E6 C>B S&X	376 ?A+C XS	0EB JNC \$+1D	01B JNC \$+03	130 LDI S&X
090	LDR- 2	1D6 A=A-C XS	39C R= 0	3B8 READ 14(d)	173 JNC \$+2E	3C4 ST=0	170 PUSH ADR	00B 11 K
376	?A+C XS	046 A>C S&X	00C ?FSET 3	358 ST=C X	236 C=C+1 XS	130 LDI S&X	318 JNC \$-1D	36A ?A+C R-
053	JNC \$+0A	0EE C>B ALL	01B JNC \$+03	056 C=0 XS	376 ?A+C XS	01B 27 L	379 ?NC XQ	027 JC \$+04
236	C=C+1 XS	391 ?NC XQ	130 LDI S&X	376 ?A+C XS	06B JNC \$+0D	31C R= 1	03C ->0FDE	04E C=0 ALL
376	?A+C XS	08C ->23E4	010 16 P	0E3 JNC \$+1C	369 ?NC XQ	36A ?A+C R-	3D8 987 [	27E C=C-1 MS
0A3	JNC \$+14	3AF 943 /	058 G=C BR,+	236 C=C+1 XS	03C ->0FDA	097 JC \$+12	125 ?NC GO	06F JC \$+0D
236	C=C+1 XS	0CE C=B ALL	391 ?NC XQ	376 ?A+C XS	098 155 [	04E C=0 ALL	036 ->0D49	3C4 ST=0
376	?A+C XS	029 ?NC GO	08C ->23E4	027 JC \$+04	130 LDI S&X	130 LDI S&X	130 LDI S&X	130 LDI S&X
34B	JNC \$-17	01E ->070A	3AF 943 /	369 ?NC XQ	080 128 B	137 311 7	00C 12 L	010 16 F
1F6	C=C+C XS	0CA C=B R-	06E A>B ALL	03C ->0FDA	36A ?A+C R-	1BC RCR 11	36A ?A+C R-	30A ?A+C R-
316	?A+C XS	2FC RCR 13	281 ?NC GO	281 641 A	127 JC \$+24	09C R= 5	02F JC \$+05	097 JC \$+12

## E2 BLOCK

0	1	2	3	4	5	6	7
130 LDI \$X	38B JNC 8-09	3D8 C>ST X	048 SETF 4	130 LDI \$X	130 LDI \$X	3E8 WRIT 15(e)	04E C=0 ALL
01A 26 Z	130 LDI \$X	066 A>B \$X	046 A>C \$X	3FF 1023 8	122 290	10C ?FSET 8	180 POP ADR
30A ?A<C R<-	044 68 D	130 LDI \$X	106 A=C \$X	38C C>C AND A	366 ?A&C \$X	013 JNC 8+02	170 PUSH ADR
04B JNC 8+09	30A ?A<C R<-	09A 154 Z	33C RCR 1	106 A=C \$X	366 ?A&C \$X	013 JNC 8+05	03C RCR 3
0AA A>C R<-	293 JNC 8-2E	36A ?A&C R<-	2FE TC80 MS	130 LDI \$X	369 ?NC XQ	3E8 WRIT 15(e)	03C RCR 3
33C RCR 1	130 LDI \$X	023 JNC 8+04	197 JC 8+32	0ED 237	006 A=0 \$X	03A ->0E7C	130 LDI \$X
008 SETF 3	040 64 E	226 C=C+1 \$X	3F8 READ 15(e)	366 ?A&C \$X	098 155 [	1F1 ?NC 60	293 659 S
398 C=ST X	30A ?A<C R<-	36A ?A&C R<-	03C RCR 3	098 JNC 8+13	108 SETF 8	2DC R= 13	21C R= 2
0EE C<>B ALL	1E7 JC 8+3C	167 JC 8+2C	39C R= 0	130 LDI \$X	38C ?FSET 0	11E A=C MS	190 LD&R- 6
369 ?NC XQ	24A C=A-C R<-	066 A>B \$X	058 B=C BR,+	137 311 7	3DB JNC 8-05	290 LD&R- A	366 ?A&C \$X
03C ->OFDA	33C RCR 1	013 JNC 8+02	358 ST=C X	366 ?A&C \$X	379 ?NC XQ	0BE A>C MS	2D3 JNC 8-26
270 624 P	363 JNC 8-14	3D8 C>ST X	104 CLRF 8	063 JNC 8+0C	03C ->OFDE	37E ?A&C MS	391 ?NC XQ
36A ?A&C R<-	38B READ 14(d)	130 LDI \$X	1B0 POP ADR	130 LDI \$X	3DB 987 [	017 JC 8+02	08C ->23E4
027 JC 8+04	30B C>ST X	00B 11 K	170 PUSH ADR	1C4 452 D	130 LDI \$X	05E C=0 MS	3AF 943 /
05E C=0 MS	28C ?FSET 7	306 ?A<C \$X	03C RCR 3	366 ?A&C \$X	030 48 0	398 C=ST X	OCE C=B ALL
288 SETF 7	063 JNC 8+0C	12F JC 8+25	106 A=C \$X	05B JNC 8+0B	3E8 WRIT 15(e)	OEE C<>B ALL	0D1 ?NC 60

## E2 BLOCK

8	9	A	B	C	D	E	F
032 ->OC34	100 256 E	03C 60 <	031 49 1	006 6 F	04E C=0 ALL	07F JC 8+0F	001 1 A
379 ?NC XQ	00E 14 N	007 7 6	041 65 R	016 22	130 LDI \$X	130 LDI \$X	1BC RCR 11
03C ->OFDE	00D 13 M	100 256 E	012 18 R	100 256	066 102 F	04B 75 K	11A A=C M
2D0 720 P	027 39 '	039 57 9	022 34 R	100 256	30A ?A<C R<-	073 JNC 8+0E	1B0 POP ADR
029 41 )	00C 12 L	026 38 :	032 50 2	100 256	087 JC 8+10	130 LDI \$X	21A C=C+A M
100 256 E	02F 47 /	049 73 I	003 3 C	008 11 K	130 LDI \$X	01B 29 ]	330 FETCH \$X
100 256 E	00F 15 0	03E 62 >	023 35 8	100 256	07E 126 "	24A C=A-C R<-	2FC RCR 13
017 23 Y	01F 31 =	100 256 E	033 51 3	100 256	30A ?A<C R<-	053 JNC 8+0A	070 N=C ALL
100 256 E	01E 30 =	000 0 E	004 4 D	008 8 H	0BF JC 8+17	130 LDI \$X	33C RCR 1
100 256 E	02E 46 .	010 16 P	014 20 T	018 24 X	36A ?A&C R<-	00D 13 M	2F6 ?C#0 XS
100 256 E	03E 62 >	020 32	024 36 \$	028 40 (	027 JC 8+04	36A ?A&C R<-	023 JNC 8+04
03B 59 Y	01D 29 J	030 48 0	034 52 4	038 56 8	130 LDI \$X	027 JC 8+04	369 ?NC XQ
019 25 Y	02D 45 -	040 64 E	005 5 E	048 72 H	049 73 I	130 LDI \$X	03C ->OFDA
100 256 E	03D 61 =	001 1 A	015 21 U	009 9 I	0A3 JNC 8+14	0AA 74 J	09B 155 [
100 256 E	01C 28 \	011 17 Q	025 37 Z	028 43 +	226 C=C+1 \$X	01B JNC 8+03	28C ?FSET 7
100 256 E	02C 44 ,	021 33 !	035 53 5	01A 26 Z	36A ?A&C R<-	130 LDI \$X	0EB JNC 8+1D

## E3 BLOCK

0	1	2	3	4	5	6	7
066 A>B \$X	067 JC 8+0C	130 LDI \$X	004 4 D	358 ST=C X	09C R= 5	09C R= 5	3E3 JNC 8-04
130 LDI \$X	130 LDI \$X	02A 42 8	1B0 POP ADR	04E C=0 ALL	350 LD&R- D	006 A=0 \$X	
09A 154 Z	03B 59 ;	30A ?A<C R<-	21A C=C+A M	130 LDI \$X	37A ?A&C M	1A6 A=A-1 \$X	
36A ?A&C R<-	30A ?A<C R<-	087 JC 8+16	330 FETCH \$X	0ED 237	128 JNC 8+25	063 JNC 8+0C	1A6 A=A-1 \$X
043 JNC 8+08	12B JNC 8+25	24A C=A-C R<-	33C RCR 1	1BC RCR 11	05A C=0 M	2B8 READ 10(+)	
226 C=C+1 \$X	050 LD&R- 1	05A C=0 M	398 C=ST X	09C R= 5	130 LDI \$X	130 LDI \$X	0A6 A>C \$X
36A ?A&C R<-	31C R= 1	1BC RCR 11	0EE C>B ALL	310 LD&R- C	1FA 506 z	1C4 452 D	2A8 WRIT 10(+)
02B JNC 8+05	102 A=C BR	114 A=C M	293 JNC 8-2E	11A A=C H	1BC RCR 11	1BC RCR 11	01B JNC 8+03
02E B=0 ALL	08E B=A ALL	218 JNC 8-3D	21B JNC 8-3D	1B0 POP ADR	09C R= 5	09C R= 5	38C ?FSET 0
369 ?NC XQ	369 ?NC XQ	03C ->OFDE	3F8 READ 15(e)	37A ?A&C M	350 LD&R- D	39F JC 8-01	
03C ->OFDA	03C ->OFDA	331 817 1	03C RCR 3	1B3 JNC 8+36	37A ?A&C M	37A ?A&C M	379 ?NC XQ
270 624 P	1FB 507 {	003 3 C	39C R= 0	0BA A>C M	1AB JNC 8+35	12B JNC 8+25	03C ->OFDE
066 A>B \$X	130 LDI \$X	001 1 A	058 G=C BR,+	05A C=0 M	05A C=0 M	0BA A>C M	3DB 987 [
130 LDI \$X	030 48 0	000 0 E	016 A=0 XS	130 LDI \$X	130 LDI \$X	170 PUSH ADR	149 ?NC XQ
030 48 0	30A ?A<C R<-	002 2 B	31C R= 1	122 290 *	137 311 7	253 JNC 8-36	024 ->0952
30A ?A&C R<-	0D3 JNC 8+1A	000 0 E	042 C=0 BR	1BC RCR 11	1RC RCR 11	30C ?FSET 1	113 JNC 8+22

## E3 BLOCK

8	9	A	B	C	D	E	F
20C ?FSET 2	1A3 JNC 8+34	058 G=C BR,+	244 CLRF 9	03F ->OF09	226 C=C+1 \$X	270 RAM SLCT	3E8 WRIT 15(e)
073 JNC 8+0E	2DB JNC 8-25	38B READ 14(d)	38B READ 14(d)	01D ?NC 60	366 ?A&C S&X	130 LDI \$X	3AB WRIT 14(d)
379 ?NC XQ	130 LDI \$X	3D8 C>ST X	16D ?NC XQ	03E ->OF07	023 JNC 8+04	OFD 253 } 3B8 READ 14(d)	
03C ->OFDE	01E 30 ^	288 SETF 7	01C ->075B	273 JNC 8-32	226 C=C+1 \$X	3F0 PRPH SLCT	3D3 JNC 8-06
3DB 987 [	30C ?FSET 1	3D8 C>ST X	198 C=M ALL	130 LDI \$X	366 ?A&C S&X	130 LDI \$X	3F8 READ 15(e)
149 ?NC XQ	013 JNC 8+02	34B WRIT 14(d)	070 N=C ALL	04C 76 L	377 JC 8-12	020 32	3E0 RTN
024 ->0952	266 C=C-1 \$X	04E C=0 ALL	04E C=0 ALL	366 ?A&C S&X	379 ?NC XQ	106 A=C S&X	000 NOP
288 READ 10(+)	31C R= 1	268 WRIT 9(0)	266 C=C-1 \$X	078 JNC 8+0F	03C ->OFDE	086 B=A S&X	000 NOP
03C RCR 3	0AA A>C R<-	3F8 READ 15(e)	130 LDI \$X	3D8 987 [	31C R= 1	000 NOP	
10E A=C ALL	0AE A>C ALL	01C R= 3	1BC RCR 11	054 84 T	001 ?NC 60	3B8 READ 14(d)	000 NOP
38C ?FSET 0	1BC RCR 11	098 C=G BR,+	330 FETCH \$X	366 ?A&C S&X	03A ->0E00	36A ?A&C R<-	000 NOP
03F JC 8+07	248 WRIT 10(+)	3E8 WRIT 15(e)	046 A>C S&X	058 JNC 8+0F	391 ?NC XQ	3F3 JNC 8-02	000 NOP
130 LDI \$X	098 C=G BR,+	0B0 C=N ALL	130 LDI \$X	130 LDI \$X	08C ->23E4	1AA A=A-1 R<-	000 NOP
0CD 205 8	358 ST=C X	158 M=C ALL	004 4 D	058 88 X	3AF 943 /	36A ?A&C R<-	000 NOP
04B JNC 8+09	088 SETF 5	39D ?NC XQ	366 ?A&C S&X	366 ?A&C S&X	130 LDI \$X	037 JC 8+06	000 NOP
30C ?FSET 1	398 C=ST X	1BC ->6F67	025 7C 60	03B JNC 8+07	019 16 F	0C6 C=P S&X	000 NOP

## E4 BLOCK

0	1	2	3	4	5	6	7
009 9 I 111 U 1	190 U RCL IMD	197 U DSE Y	198 C=M ALL	369 ?NC XQ	08C ->23E4	005 5 E	
220 544 01B U E	080 U 0	072 U 114 02	046 C=0 S&X	03C ->OFDA	3AF 943 /	306 ?A<C S&X	
1C2 U LBL 013 U 3	111 U 1	183 U GTO 02	00C ?FSET 3	0C6 198 F	198 C=M ALL	14F JC &+29	
001 U 1 143 U /	012 U 2	00E U 14	02B JNC \$+05	130 LDI S&X	27C RCR 9	226 C=C+1 S&X	
0F7 U 119 0 111 U 1	018 U 8	17E U AVIEW	2FE ?C#0 MS	00B 11 K	10E A=C ALL	366 ?A>C S&X	
000 U 0 140 U +	143 U /	196 U ISG	01B JNC \$+03	366 ?A&C S&X	281 ?NC GO	383 JNC &-0A	
057 U 87 W 130 U STO 00	103 U LBL 02	000 U 0	130 LDI S&X	027 JC \$+04	03A ->0EA0	130 LDI S&X	
04E U 78 N 102 U LBL 01	183 U ENTER*	1B2 U GTO 01	010 16 P	341 ?NC XQ	130 LDI S&X	00C 12 L	
044 U 68 D 1F1 U TEXT	169 U FRC	022 U 34	39C R= 0	08C ->23D0	003 3 C	306 ?A<C S&X	
054 U 84 T 042 U 66 B	141 U -	1CC U END	058 G=C ER,+	144 324 D	306 ?A>C S&X	337 JC &-1A	
053 U 83 S 19B U ARCL	19B U ARCL	007 U 7	37C RCR 12	346 ?A&0 S&X	02B JNC \$+05	130 LDI S&X	
054 U 84 T 000 U 0	073 U 115 X	22F U 47 /	106 A=C S&X	067 JC \$+0C	198 C=M ALL	00F 15 D	
19C U FIX 1F2 U TEXT	1CE U X<	241 ?NC XQ	016 A=0 XS	369 ?NC XQ	13C RCR 8	366 ?A>C S&X	
000 U 0 07F U 127 e	074 U 116 L	00C ->0390	31C R= 1	03C ->OFDA	0E6 C>B S&X	04B JNC &+09	
1A6 U XROM INB 03D U 61 =	112 U 2	358 ST=C X	342 ?A&0 ER	137 311 7	388 JMC &-0F	086 B=A S&X	
0C5 U 69 E 118 U 8	142 U *	244 CLRF 9	023 JNC \$+04	391 ?NC XQ	130 LDI S&X	391 ?NC XQ	

## E4 BLOCK

8	9	A	B	C	D	E	F
08C ->23E4	10A A=C R-	0D2 C=B P-Q	2FE ?C#0 MS	002 ->00F1	08C ->23E4	27A C=C-1 M	0EE C>B ALL
3AF 943 /	0EE C>B ALL	37C RCR 12	097 JC \$+12	04E C=0 ALL	3B3 947 3	330 FETCH S&X	OFC RCR 10
066 A>B S&X	0AE A>C ALL	0EE C>B ALL	391 ?NC XQ	058 G=C ER,+	3C5 ?NC GO	2F6 ?C#0 XS	0EA C>B R-
341 ?NC XQ	158 M=C ALL	31C R= 1	08C ->23E4	369 ?NC XQ	002 ->00F1	303 JNC &-20	0AE A>C ALL
08C ->23D0	37C RCR 12	2CE ?B#0 ALL	3AF 943 /	03C ->OFDA	198 C=M ALL	10E A=C ALL	276 C=C-1 XS
154 340 T 10A A=C R-	01F JC \$+03	39C R= 0	05F 95	0FC RCR 10	080 C=N ALL	2F6 ?C#0 XS	
198 C=M ALL	016 A=0 XS	342 ?A&0 ER	098 C=G ER,+	130 LDI S&X	001 ?NC XQ	0BC RCR 5	053 JNC &+0A
ODC R= 10	0B0 C=N ALL	147 JC \$+28	262 C=C-1 ER	01E 30	020 ->0800	0AE A>C ALL	0CE C=B ALL
058 G=C ER,+	05C R= 4	391 ?NC XQ	106 A=C S&X	362 ?A&C ER	34B JNC &-17	2DC R= 13	37C RCR 12
10E A=C ALL	262 C=C-1 ER	08C ->23E4	3E6 LSHFA S&X	19F JC \$+33	0AE A>C ALL	150 LDOR- 5	056 C=0 XS
19C R= 11	070 M=C ALL	3DC 988 \	3C6 RSHFC S&X	36A ?A&C R<-	10E A=C ALL	1DE A=A-C MS	0EE C>B ALL
3EA LSHFA R-	0E0 SLCT Q	070 M=C ALL	102 A=C ER	01B JNC \$+03	1BC RCR 11	13F JC &+27	243 JNC &-38
3EA LSHFA R-	2DC R= 13	198 C=M ALL	31C R= 1	26A C=C-1 R<-	330 FETCH S&X	10A A=C R<-	103 JNC &+20
OCE C=B ALL	0A0 SLCT P	35C R= 12	1A9 ?NC XQ	36A ?A&C R<-	2E6 ?C#0 S&X	01C R= 3	2BB JNC &+29
37C RCR 12	3SC R= 12	222 C=C+1 ER	09C ->276A	26B JNC \$+33	32F JC &-1B	198 C=M ALL	28B JNC &+2F
31C R= 1	198 C=M ALL	0A3 JNC \$+14	3C5 ?NC GO	391 ?NC XQ	058 G=C ER,+	0FC RCR 10	27B JNC &+31

## E5 BLOCK

0	1	2	3	4	5	6	7
27A C=C-1 M	047 JC \$+08	306 ?A<C S&X	130 LDI S&X	330 FETCH S&X	048 SETF 4	130 LDI S&X	290 LDOR- A
330 FETCH S&X	23A C=C+1 M	2E7 JC \$-24	0CE 206 "	2F6 ?C#0 XS	130 LDI S&X	00A 10 J	390 LDOR- E
2F6 ?C#0 XS	23A C=C+1 M	39C R= 0	306 ?A<C S&X	2C8 JNC \$-27	07F 127 8	306 ?A&C S&X	30C ?FSET 1
04B JNC &+15	03C RCR 3	3D0 LDOR- F	347 JC \$-18	1F6 C=C+C XS	106 A=C S&X	2FF JC &-21	01B JNC &+03
276 C=C-1 XS	1D8 C=C M ALL	31C R= 1	01B JNC \$+03	1F6 C=C+C XS	198 C=M ALL	213 JNC &-3E	0A2 A>C ER
2F6 ?C#0 XS	0FC RCR 10	366 ?A&C S&X	162 A=A+1 ER	0FC RCR 10	20C ?FSET 2	242 C=A-C ER	
037 JC &+06	2B1 ?NC GO	2C3 JNC \$-28	387 JC \$-10	27A C=C-1 M	3B0 C=C AND A	2E3 JNC &-24	158 M=C ALL
2FE ?C#0 MS	03E ->0FAC	130 LDI S&X	198 C=M ALL	330 FETCH S&X	106 A=C S&X	04C ?FSET 4	25B JNC &-35
37B JNC &-11	391 ?NC XQ	0BD 189 =	130 LDI S&X	216 C=C+A XS	130 LDI S&X	2D3 JNC &-26	130 LDI S&X
OCE C=B ALL	08C ->23E4	362 ?A&C ER	014 20 T	23C RCR 2	064 100 d	066 102 f	
0FC RCR 10	39C 988 \	JE3 JNC \$-04	27C RCR 9	358 ST=C X	306 ?A&C S&X	303 JNC &-06	306 ?A>C S&X
37B JNC &-11	303 JNC \$-20	222 C=C+1 ER	330 FETCH S&X	044 CLRF 4	0EB JNC \$+1D	19C R= 11	34F JC &-17
276 C=C-1 XS	130 LDI S&X	362 ?A&C ER	01C R= 3	198 C=M ALL	00C ?FSET 3	210 LDOR- 8	130 LDI S&X
2F6 ?C#0 XS	0A8 168 (	047 JC \$+08	050 LDOR- 1	37C RCR 12	047 JC &+08	11A A=C M	070 112 P
34F JC &-17	362 ?A&C ER	366 ?A&C S&X	1BC RCR 11	1FE C=C+C MS	04C ?FSET 4	198 C=M ALL	306 ?A&C S&X
2CE ?B#0 ALL	047 JC \$+08	283 JNC \$-30	27A C=C-1 M	013 JNC \$+02	31F JC &-1D	2DC R= 13	043 JNC &+08

## E5 BLOCK

8	9	A	B	C	D	E	F
04C ?FSET 4	2A7 JC &-2C	087 135 6	02F JC \$+05	391 ?NC XQ	08C ->23E4	058 G=C ER,+	270 RAM S&X
31F JC &-1D	2AB JNC &-2B	366 ?A&C S&X	088 SETF 5	08C ->23E4	2F8 760 X	0AE A>C ALL	0CE C=B ALL
20C ?FSET 2	130 LDI S&X	3A0 ?NC RTN	080 C=N ALL	06C 108 1	0CE C=B ALL	07C RCR 4	2F0 WRITE DATA
30B JNC &-1F	07B 123 {	130 LDI S&X	226 C=C+1 S&X	055 85 U	268 WRIT 9(0)	0A6 A>C S&X	098 C-G ER,+
00C ?FSET 3	306 ?A<C S&X	0C3 195 C	070 M=C ALL	3C4 ST=0	08E B=A ALL	046 C=0 S&X	31C R= 1
2FB JNC &-21	27F JC &-31	366 ?A&C S&X	180 POP ADR	008 SETF 3	391 ?NC XQ	226 C=C+1 S&X	10A A=C R<-
303 JNC &-20	353 JNC &-16	3A0 ?NC RTN	23A C=C+1 M	391 ?NC XQ	08C ->23E4	070 N=C ALL	0B0 C=N ALL
130 LDI S&X	04E C=0 ALL	130 LDI S&X	1E0 GOTO ADR	08C ->23E4	3AF 943 /	385 ?NC XQ	22A C=C+1 R<-
075 117 u	144 CLRF 6	018 24 X	08E 142 N	20F 527 0	06E A>B ALL	08C ->23ED	070 N=C ALL
306 ?A<C S&X	220 C=KEY KY	366 ?A&C S&X	003 3 C	033 JNC \$+06	04E C=0 ALL	3C6 966 F	30A ?A>C R<-
043 JNC &+08	3C8 CLRKEY	01F JC \$+03	013 19 S	000 MOP	35E ?A&0 MS	378 READ 13(c)	0AF JC &+15
04C ?FSET 4	148 SETF 6	004 4 D	391 ?NC XQ	017 JC &+02	017 JC &+02	08E B=A ALL	130 LDI S&X
287 JC &-30	3F7 JC &-02	3E0 RTN	00E 14 N	08C ->23E4	22E C=C+1 ALL	08E B=A ALL	0B0 C=N ALL
20C ?FSET 2	03C RCR 3	130 LDI S&X	017 23 W	3EC 1004 1	0BE A>C MS	0A6 A>C S&X	002 2 B
287 JC &-2A	106 A=C S&X	0C2 194 B	08C ?FSET 5	393 JNC &-0E	2FC RCR 13	0B0 C=N ALL	36A ?A&C R<-
30C ?FSET 1	130 LDI S&X	366 ?A&C S&X	02F JC \$+05	391 ?NC XQ	39C R= 0	206 C=C+A S&X	01F JC &+03

## E6 BLOCK

0	1	2	3	4	5	6	7
37C RCR 12 08C ->23ED	3C6 RSHFC S8X 290 LDR- A	362 ?A8C ER	222 C=C+1 ER	083 JNC \$+10	02E B=0	ALL	
063 JNC \$+0C 3C6 966 F	3C6 RSAFC S8X 01C R= 3	03F JC \$+07	362 ?A8C ER	2D6 ?B80 XS	389 ?MC X0		
130 LDI S8X 08E A>B ALL	266 C=C-1 S8X 362 ?A8C ER	008 SETF 3	087 JC \$+16	07B JNC \$+0F	08C ->23E2	3AF 943 /	
004 10 J 18C ?FSET 11	1E6 C=C+C S8X 133 JNC \$+26	240 SETDEC	10B JNC \$+21	2N0 SETDEC	3AF 943 /		
36A ?A8C R- 3D5 TC X0	266 C=C-1 S8X 302 ?A8C ER	046 C=0 S8X	388 SETF 0	046 C=0 S8X	16B JNC \$+2D		
02F JC \$+05 051 ->14ED	046 A>C S8X 053 JNC \$+0A	266 C=C-1 S8X	05E C=0 MS	236 C=C+1 XS	278 READ 9(B)		
046 C=0 S8X 0EE C>B ALL	02E B=0 ALL 0AE A>C	ALL 0E6 C>B S8X	240 SETDEC	06E A>B ALL	02B JNC \$+05		
270 RAM SLCT 0EB WRIT 3(X)	040 SLCT P 08C RCR 5	093 JNC \$+12	27E C=C-1 MS	376 ?A8C XS	198 C=M ALL		
278 READ 9(B) 3B5 ?NC X0	35C R= 12 040 SLCT P	222 C=C+1 ER	0FE C>B MS	15B JNC \$+2B	23E C=C+1 MS		
158 M=C ALL 18C ->6FED	0E0 SLCT 0 0E2 C>B	ER 362 ?A8C ER	260 SETHEX	046 C=0 S8X	3E7 JC \$+04		
198 C=M ALL 3AB ?NC X0	01C R= 3 0C2 C=B	ER 01F JC \$+03	0E0 SLCT Q	226 C=C+1 S8X	27E C=C-1 MS		
37C RCR 12 08C ->23EB	384 CLRF 0 3D4 R=R-1	388 SETF 0	1A6 A=A-1 S8X	276 C=C-1 XS	11E A=C MS		
158 M=C ALL 347 839 6	204 CLRF 2 27C RCR 9	06B JNC \$+0D	346 ?A80 S8X	08E B=A ALL	05E C=0 MS		
106 A=C S8X 3B8 RSHFA ALL	004 CLRF 3 0AE A>C	ALL 222 C=C+1 ER	0D7 JC \$+1A	260 SETHEX	27E C=C-1 MS		
2CB JNC \$+27 080 C=N ALL	342 ?A80 ER 0DB JNC \$+1B	362 ?A8C ER	260 SETHEX	306 ?A8C S8X	2FC RCR 13		
3B5 ?NC X0	23C RCR 2 153 JNC \$+2A	222 C=C+1 ER	02B JNC \$+05	2DA ?B80 M	013 JNC \$+02	158 M=C ALL	

## E6 BLOCK

8	9	A	B	C	D	E	F
2DC R= 13 1A6 A=A-1 S8X	026 B=0 S8X 01B JNC \$+03	2A3 JNC \$+2C	37E ?A8C MS	23E C=C+1 MS	04B JNC \$+09		
290 LDR- A 06E A>B ALL	040 SLCT P 236 C=C+1 XS	0F3 JNC \$+1E	2D3 JNC \$+26	37E ?A8C MS	23E C=C+1 MS		
31E ?A8C MS 23B JNC \$+39	042 C=0 ER 18B JNC \$+31	1C6 A=A-C S8X	31E ?A8C MS	067 JC \$+0C	37E ?A8C MS		
1F7 JC \$+3E OFB JNC \$+1F	222 C=C+1 ER 31C R= 1	06E A>B ALL	06B JNC \$+0D	260 SETHEX	387 JC \$+10		
37E ?A8C MS 253 JNC \$+36	0E2 C>B ER 222 C=C+1 ER	283 JNC \$+30	388 SETF 0	391 ?NC X0	38C ?FSET 0		
2A3 JNC \$+2C 23E C=C+1 MS	21C R= 2 023 JNC \$+04	26B JNC \$+33	1D8 C>M ALL	08C ->23E4	377 JC \$+12		
23E C=C+1 MS 37E ?A8C MS	384 CLRF 0 39C R= 0	1DB JNC \$+3B	0AE A>C ALL	06C 108 1	208 SETF 2		
37E ?A8C MS 17B JNC \$+2F	198 C=M ALL 222 C=C+1 ER	1B3 JNC \$+36	3E6 LSHFA S8X	05F 95 -	388 GETF 0		
06F JC \$+0B 23E C=C+1 MS	046 C=0 S8X 017 JC \$+02	198 C=M ALL	2FC RCR 13	391 ?NC X0	333 JNC \$+1A		
00C ?FSET 3 37E ?A8C MS	266 C=C-1 S8X 262 C=C-1 ER	11E A=C MS	39C R= 0	08C ->23E4	38C ?FSET 0		
147 JC \$+28 16B JNC \$+2D	158 M=C ALL 06E A>B ALL	2FC RCR 13	102 A=C ER	383 947 3	34F JC \$+17		
008 SETF 3 23E C=C+1 MS	1A6 A=A-1 S8X 2A0 SETDEC	01C R= 3	33C RCR 1	389 ?NC X0	3E3 JNC \$+04		
2D4 ?B80 M 37E ?A8C MS	346 ?A80 S8X 20C ?FSET 2	0AE A>C ALL	08C ->23E2	24B JNC \$+37			
267 JC \$+34 0AF JC \$+15	0DF JC \$+1B 02F JC \$+05	158 M=C ALL	1D8 C>M ALL	3F5 1013 U	2DA ?B80 M		
2A0 SETDEC 2DA ?B80 M 198 C=M ALL	146 A=A+C S8X 2DC R= 13	290 LDR- A	183 JNC \$+30	37E ?A8C MS	023 JNC \$+04		
06E A>B ALL 037 JC \$+06	2F6 ?C00 XS 06E A>B ALL			208 SETF 2			

## E7 BLOCK

0	1	2	3	4	5	6	7
3B8 JNC \$+09 05B JNC \$+0B	06E A>B ALL 0E0 SLCT Q	0A2 A>C ER	1E6 C=C+C S8X	398 C=ST X	070 N=C ALL		
043 JNC \$+08 040 SLCT P 166 A=A+1 S8X	2DC R= 13 0B0 C=N ALL	266 C=C-1 S8X	13C RCR 8	38D ?NC X0			
38C ?FSET 0 214 ?R= 2	06E A>B ALL 0BE A>C MS	34C ?FSET 12	070 N=C ALL	0AE A>C ALL	04A ->29E3		
307 JC \$+20 043 JNC \$+08	06B JNC \$+0D 3D4 R=R-1	1DF JC \$+3B	05C R= 4	3E5 ?NC X0	080 C=N ALL		
2DC R= 13 00C ?FSET 3	35E ?A80 MS 33C RCR 1	0CC ?FSET 10	2B8 READ 10(+) 0A8 ->2AF9	39C R= 0			
250 LDR- 9 33F JC \$+19	2BB JNC \$+29 120 ?P=Q	1CF JC \$+39	0CA C=B R<- 0AE A>C ALL	038 G-C ER,+			
0FE C>B MS 053 JNC \$+0A	053 JNC \$+04 3E8 JNC \$+03	362 ?A8C ER	198 C=M ALL	0FC RCR 10			
388 SETF 0 240 SETDEC	35E ?A80 MS 0E2 C>B ER	023 JNC \$+04	26B WRIT 9(B) 35B ST=C X	070 N=C ALL			
3A3 JNC \$+0C 166 A=A+1 S8X	047 JC \$+08 06C C=B ER	369 ?NC X0	0AE A>C ALL 13C RCR 8	39C R= 0			
2DA ?B80 M 06E A>B ALL 2DA ?B80 M	040 SLCT P 03C ->0FDA	07C RCR 4	0AE A>C ALL	38C ?FSET 0			
36F JC \$+13 313 JNC \$+1E	037 JC \$+06 3D4 R=R-1	3CE 974 "	39C R= 0	0BD ?NC X0	0AF JC \$+15		
38C ?FSET 0 00C ?FSET 3	06E A>B ALL 0E0 SLCT Q	388 SETF 0	058 G=C ER,+ 0BC ->232F	080 C=N ALL			
2BF JC \$+29 05F JC \$+0B	2A0 SETDEC 398 JNC \$+0D	0FC RCR 10	141 ?NC X0	080 C=N ALL	2E6 ?C#0 S8X		
388 SETF 0 2DA ?B80 M 1A6 A=A-1 S8X	19C R= 11 3C6 RSHFC S8X	0A4 ->2950	07C RCR 4	037 JC \$+06			
373 JNC \$+12 033 JNC \$+06	06E A>B ALL 190 LDR- 6	3C6 RSHFC S8X	0AE A>C ALL	39C R= 0	391 ?NC X0		
2DA ?B80 M 2A0 SETDEC 26B JNC \$+33	19C R= 11 266 C=C-1 S8X	17C RCR 6	098 C=6 ER,+ 08C ->23E4				

## E7 BLOCK

8	9	A	B	C	D	E	F
3AF 943 / 0AE A>C ALL	OFC RCR 10 0F0 C>N ALL	290 LDR- A	23C RCR 2	0A4 ->2950	37C RCR 12		
3C1 ?NC 60 07C RCR 4	0AE A>C ALL 266 C=C-1 S8X	2CB JNC \$+27	3C6 RSHFC S8X	3E5 ?NC X0	39C R= 0		
002 ->00FO 3D0 LDR- F	38C ?FSET 0 2E6 ?C#0 S8X	262 C=C-1 ER	3C6 RSHFC S8X	0A8 ->2AF9	058 G=C ER,+		
288 READ 10(+) 39C R= 0	123 JNC \$+24 25B JNC \$+35	362 ?A8C ER	0AE A>C ALL	0BD ?NC X0	0EE C>B ALL		
05C R= 4 362 ?A8C ER	384 CLRF 0 0F0 C>N ALL	363 JNC \$+14	0AE A>C S8X	08C ->232F	37C RCR 12		
0EA C>B R- 0DB JNC \$+1B	399 ?NC X0 OFC RCR 10	0A2 A>C ER	070 N=C ALL	399 ?NC X0	0EE C>B ALL		
278 READ 9(B) 262 C=C-1 ER	044 ->29E6 0AE A>C ALL	243 JNC \$+2C	31C R= 1 064 ->29E6	31C R= 1			
2FC RCR 13 362 ?A8C ER	28B JNC \$+2F 38C ?FSET 0	198 C=M ALL	3D0 LDR- F	0BO C=N ALL	0CA C=B R<-		
39C R= 0 087 JC \$+10	262 C=C-1 ER 01B JNC \$+03	268 WRIT 9(Q) 058 G=C ER,+ 2E6 ?C#0 S8X	0CA C=B R<-	268 WRIT 9(Q) 058 G=C ER,+ 2E6 ?C#0 S8X	268 WRIT 9(Q) 058 G=C ER,+ 2E6 ?C#0 S8X		
058 G=C ER,+ 2D0 LDR- B	362 ?A8C ER 384 CLRF 0 05C R= 4	05C R= 4	253 JNC \$+36 05C R= 4	253 JNC \$+36 05C R= 4	253 JNC \$+36 05C R= 4		
0EE C>B ALL 31C R= 1	01F JC \$+03 36B JNC \$+13	2B8 READ 10(+) 070 N=C ALL	2B8 READ 10(+) 070 N=C ALL	2B8 READ 10(+) 070 N=C ALL	2B8 READ 10(+) 070 N=C ALL		
2FC RCR 13 050 LDR- 1	310 LDR- C 198 C=M ALL	248 WRIT 10(+) 05C R= 4	0CA C=B R<- 05C R= 4	0CA C=B R<- 05C R= 4	0CA C=B R<- 05C R= 4		
0EE C>B ALL 058 G=C ER,+ 0F0 C>N ALL	373 JNC \$+12 262 C=C-1 ER	248 WRIT 10(+) 05C R= 4	141 ?NC X0 0EA C>B R<- 000 NOP	141 ?NC X0 0EA C>B R<- 000 NOP	141 ?NC X0 0EA C>B R<- 000 NOP		
0CA C=B R- 0F0 C>N ALL	262 C=C-1 ER 362 ?A8C PR 080 C=N ALL	248 WRIT 10(+) 05C R= 4	278 READ 9(B) 098 C=6 ER,+ 08C ->23E4	278 READ 9(B) 098 C=6 ER,+ 08C ->23E4	278 READ 9(B) 098 C=6 ER,+ 08C ->23E4		
158 M=C ALL 266 C=C-1 S8X	362 ?A8C PR 080 C=N ALL	268 WRIT 9(Q) 058 G=C ER,+ 08C ->23E4					
098 C=G PR,+ 0F0 C>N ALL	077 JC \$+0E 01F JC \$+03 0AE A>C ALL	141 ?NC X0 0EA C>B R<- 000 NOP					

## E8 BLOCK

	0	1	2	3	4	5	6	7
197	407	W	005	5	E	00E	14	N
020	32		020	32	E	00F	15	O
003	3	C	005	5	R	020	18	R
008	11	K	012	18	R	00F	15	O
013	19	S	012	18	R	00F	15	O
015	21	SUM	197	407	W	00F	15	M
000	13		020	32	S	00D	13	M
020	32		013	19	S	197	407	M
005	5	E	005	5	S	020	32	S
012	18	ERR	011	17	SQ	020	32	S
012	18	RR	013	19	S	005	5	S
197	407	W	005	5	E	001	1	A
020	32		012	18	R	001	1	A
014	20	T	012	18	R	00E	14	N
019	25	TY	197	407	W	020	32	N
010	16	P	020	32		004	4	D
			001	1	A	00F	15	O
						197	407	M

## E8 BLOCK

	8	9	A	B	C	D	E	F
020	->0899	3D9 ?NC XQ	001	1	A	379 ?NC XQ	23C RCR	2
3C1	?NC XQ	01C ->07F6	017	23	W	03C ->0FDE	358 ST=C	X
080	->2CF0	3D0 ?NC XQ	020	32		06C 108	1	304 CLR
3BD	?NC XQ	04C ->2BF7	02D	45	-	055 85	U	398 C=ST
01C	->07EF	149 ?NC XQ	000	NOP		3B3 JNC	*-0A	37C RCR
097	151	W	024	->0952	04E C=0	ALL	358 ST=C	X
020	32	278 READ 9(Q)	058	G-C	BR,+	149 ?NC XQ	03C ->0FDE	379 ?NC XQ
012	18	R	0EE	C>B	ALL	226 C=C+1	S&X	249 ?NC XQ
004	4	D	3E0	RTN		104 CLR	8	00C ->0392
019	25	Y	0AD	173	-	070 N=C	ALL	29B JNC
220	544		020	32		2C4 CLR	13	*-2D
00E	A=0	ALL	005	5	E	14C TFS	6	30C TFS
080	C=N	ALL	031	49	1	013 JNC	*+02	31B TFS
106	A=C	SIX	020	32		108 SETF	8	3C1 ?NC XQ
JA1	?NC XQ	004	4	D		3B8 READ	14(d)	0AE A>C
014	->05EB	00E	14	N		002 ->00FO	1	3D8 C>ST X
			10B JNC	*+1F		304 CLR	1	03C ->0FDE
						358 ST=C	X	379 ?NC XQ
						3EC 1004	1	15C R=
							304 CLR	1
							R=	262 C=C-1

## E9 BLOCK

	0	1	2	3	4	5	6	7
05F	JC	*+0B	03C ->0FDE	369 ?NC XQ	0B0 C=N	ALL	2B8 READ	10(+)
262	C=C-1	PR	3B3 947	3	03C ->0FDA	3D8 C>ST X	0AA A>C	R=
10F	JC	*+21	0B0 C=N	ALL	301 769	A	07C RCR	4
262	C=C-1	PR	3D8 C>ST X		0B0 C=N	ALL	0CA C=B	R=
03F	JC	*+07	223 JNC	*-3C	13C RCR	8	070 N=C	ALL
262	C=C-1	PR	0B0 C=N	ALL	070 N=C	ALL	3A1 ?NC XQ	0EA C>B
04F	JC	*+15	13C RCR	8	365 ?NC XQ	080 ->20E8	0AA A>C	R=
262	C=C-1	ER	10E A=C	ALL	08C ->23D9	1FD ?NC XQ	10A A=C	R=
09F	JC	*+13	341 ?NC XQ	03C 60	<	018 ->067F	07C RCR	4
262	C=C-1	ER	08C ->23D0		0B0 C=N	ALL	149 ?NC XQ	070 N=C
08F	JC	*+11	012	18	R	JD8 C>ST X	024 ->0952	17C RCR
379	?NC XQ	241 ?NC XQ	208 SETF	2	28C TFS	7	014 ->05A1	0B0 C=N
03C	->0FDE	00C ->0390	3D8 C>ST X		023 JNC	*+04	06A C=N	ALL
06C	108	1	0B0 C=N	ALL	070 N=C	ALL	106 A=C	S&X
014	20	T	3D9 C>ST X		0C4 CLR	10	149 ?NC XQ	0EA C>B
379	?NC XQ	10E A=C	ALL		0E5 ?NC XQ	024 ->0952	07C RCR	R=
					0BC ->0390		378 READ	13(c)
							10E A=C	ALL
							1E6 C=C+1	S&X
							0A2 A>C	ER

## E9 BLOCK

	8	9	A	B	C	D	E	F
070	N=C	ALL	063 JNC	*+0C	226 C=C+1	S&X	222 C=C+1	ER
1D0	LDR-	7	379 ?NC XQ	070 N=C	ALL	1B E=A=A-1	MS	084 CLR
05C	R=	4	03C ->0FDE	08C TFS	5	362 A>C	ER	5
302	?A>C	PR	06C 108	1	1D3 JNC	*+3A	01F JC	*+03
013	JNC	*+02	026 38	8	0B0 C=N	ALL	042 C=0	ER
02E	B=0	ALL	379 ?NC XQ	17C RCR	6	226 C=C+1	S&X	080 C=N
080	C=N	ALL	03C ->0FDE	2FE ?C#0	MS	35E ?A#0	MS	09C R=
042	A>C	PR	3B3 947	3	0C3 JNC	*+18	3C7 JC	*-08
070	N=C	ALL	248 SETF	9	11E A=C	MS	0AE A>C	ALL
244	CLR	9	3AD ?NC XQ	07C RCR	4	080 C=N	ALL	37C RCR
07C	RCR	4	08C ->23EB	01C R=	3	30C RCR	10	15C R=
31C	R=	1	258 600	X	0A2 A>C	ER	1C2 A=A-C	ER
042	C=0	PR	379 ?NC XQ	390 LDR-	E	10A A=C	R=	158 M=C
21C	R=	2	03C ->0FDE	3DC R=R+1		0AE A>C	ALL	08B JNC
042	C=0	PR	3AF 943	/	070 N=C	ALL	23C RCR	2
306	?A>C	S&X	0B0 C=N	ALL	198 C=M	ALL	198 C=M	ALL
			222 C=C+1	ER	198 C=M	ALL	09C R=	5
							024 B=0	R=
							158 M=C	ALL
							3B5 ?NC XQ	ALL
							08C ->23ED	3CC ?KEY
							033 JNC	*+06
							18A 394	J
							36D ?NC XQ	36D ?NC XQ

## EA BLOCK

0	1	2	3	4	5	6	7
08C ->2JDB	384 CLRF 0	JFO PRPH SLCT 098 C=G BR,+ 046 C=0 S&X	JEB JNC \$-03 31C R= 1 22C ?FI 2	22C ?FI 2			
197 407 W	05C R= 4	038 READ 0(T) 31C R= 1 3FO PRPH SLCT	379 ?MC X0 03C ->OFDE	1DE A=A-C MS 05B JNC \$+0B			
01B JNC \$+03	250 LDR- 9	0FC RCR 10 14A A=A+C RK- 3EO RTN	03C ->OFDE	047 JC \$+08 3J3 JNC \$-1A			
36B JNC \$-13	05C R= 4	09C R= 5 013 JNC \$+02 16A A=A+1 RK-	379 ?MC X0 2FB 760 X	0AE A>C ALL 0AE A>C ALL			
148 SETF 6	22A C=C+1 R<- 10A A=C RK-	17E A=A+1 HS 17E A=A+1 HS 06C 108 1	03C ->OFDE 1B0 POP ADR	07B JNC \$+0F 0EA C>B R<-			
34D ?MC X0	39F JC \$-0D	22C ?FI 2 22C ?FI 2 014 20 T	23A C=C+1 H 23A C=C+1 H 027 JC \$+04	2FE TC80 MS 0CA C=B R<-			
08C ->2JEB	30C ?KEY	10F JC \$+11 379 ?MC X0 1E0 GOTO ADR	02A B=A RC- 38B READ 0(T)	08A B=A RC- 158 M=C ALL			
258 600 X	38F JC \$-0F	08B JNC \$+11 01C R= 3 00C ?FSET 3	14A A=A+C RC- 0AE A>C ALL	0AE A>C ALL 38B SETF 0			
180 POP ADR	22C ?FI 2	17E A=A+1 HS 360 TC RTN 013 JNC \$+02	03C ->OFDE 14A A=A+C RC- 0BB JNC \$+11	0BB JNC \$+11 22C ?FI 2			
23A C=C+1 H	30B JNC \$-05	378 READ 0(T) 37C RCR 12 080 C=N ALL	379 ?MC X0 013 JNC \$+02 0AE A>C ALL	0AE A>C ALL 16B JNC \$+2D			
1E0 GOTO ADR	01E A=0 MS	10A A=C RK- 01C R= 3 046 C=0 S&X	046 C=0 S&X 21C R= 2 16A A=A+1 RK-	06E A>B ALL 2E8 JNC \$-23			
04E C=0 ALL	130 LDI SIX	02E B=0 ALL 0FC RCR 10 013 JNC \$+02	21C R= 2 17E A=A+1 HS 10A A=C RC- 2DC R= 13	06E A>B ALL 090 LDR- 2			
058 G=C BR,+ 16 P	23C RCR 2	2E2 PC80 BR 037 JC \$+06	210 LDR- 8 22C ?FI 2 17E A=A+1 HS 10A A=C RC- 2DC R= 13	090 LDR- 2 38C ?FSET 0			
084 CLRF 5	270 RAM SLCT	210 LDR- 8 01F JC \$+03	22C ?FI 2 250 LDR- 9 10A A=C RC- 2DC R= 13	3EE LSHFA ALL 01B JNC \$+03			
004 CLRF 3	130 LDI SIX	150 LDR- 5 01F JC \$+03	250 LDR- 9 3EE LSHFA ALL 01B JNC \$+03	3EE LSHFA ALL 01B JNC \$+03			
04E C=0 ALL	0FE 254 "	070 N=C ALL 226 C=C+1 S&X	0AE A>C ALL 0AE A>C ALL 06E A>B ALL	06E A>B ALL 01B JNC \$+03			

## EA BLOCK

8	9	A	B	C	D	E	F
2DC R= 13	15C R= 6	38C ?FSET 0	01F JC \$+03 073 JNC \$+0E	243 579 C	373 JNC \$-12	OAE A>C ALL	
250 LDR- 9	1DE A=A-1 MS	02F JC \$+05	36A ?ABC RK- 042 A>C BR	379 ?MC X0 31C R= 1	31C R= 1	080 C=N ALL	
25E C=A-C MS	35E ?A80 MS	158 H-C ALL	137 JC \$+26 0AE A>C ALL	03C ->OFDE 150 LDR- 5	150 LDR- 5	0A2 A>C PR	
06E A>B ALL	033 JNC \$+06	388 SETF 0	0AE A>C ALL 0FO CON ALL	06C 108 1	31C R= 1	102 A=C PR	
0AE A>C ALL	05C R= 4	02E B=0 ALL	0FC RCR 10 302 ?ACK	01D 29 J	0AE A>C ALL	070 M=C ALL	
1BE A=A-1 MS	1BE A=A-1 MS	013 JNC \$+02	0AE A>C ALL 043 JNC \$+08	369 ?MC X0 23C RCR 2	23C RCR 2	0AE A>C ALL	
35E ?A80 MS	35E ?A80 MS	0EE A>B ALL	080 C=N ALL 0FO CON ALL	03C ->OFDA 302 ?ACK	302 ?ACK	0BC RCR 5	
04B JNC \$+15	047 JC \$+08	00C ?FSET 3	01C R= 3 0AE A>C ALL	247 583 6	02F JC \$+05	OAE A>C ALL	
0DC R= 10	23C RCR 2	360 TC RTN	2E2 PC80 BR 080 C=N ALL	379 ?MC X0 39C R= 0	39C R= 0	046 S=6	
1BE A=A-1 MS	23C RCR 2	31C R= 1	083 JNC \$+10 0A2 A>C BR	03C ->OFDE 222 C=C+1 BR	222 C=C+1 BR	3FO PRPH SLCT	
35E ?A80 MS	23C RCR 2	0AA A>C RC- 362 ?ABC	362 ?ABC BR 102 A=C BR	06C 108 1	362 ?ABC BR	270 RAM SLCT	
083 JNC \$+10	23C RCR 2	10A A=C RC- 113 JNC \$+22	113 JNC \$+22 070 N=C ALL	00A 10 J	337 JC \$-1A	3BB READ 14(d)	
11C R= 8	07C RCR 4	0AE A>C RC- 150 LDR- 5	150 LDR- 5 08B JNC \$+11	3CB JNC \$-07	21C R= 2	3DB C>ST X	
1BE A=A-1 MS	3DA R=R-1	07C RCR 4	01C R= 3 0FO CON ALL	0DD LDR- 3 058 G=C BR,+ 1	058 G=C BR,+ 1	084 CLRF 5	
35E ?A80 MS	04A C=0 RC- 0AE A>C ALL	0AE A>C ALL 042 A>C BR	369 ?MC X0 01C R= 3	362 ?ABC BR	2BC RCR 7	3DB C>ST X	
05B JNC \$+0B	06E A>B ALL	08C ?FSET 5	302 ?ACK BR 03C ->OFDA	03C ->OFDA 362 ?ABC BR	05C R= 4	3AB WRIT 14(d)	

## EB BLOCK

0	1	2	3	4	5	6	7
3E0 RTN	0A2 A>C BR	308 SETF 1	288 SETF 7 347 839 6	308 SETF 1	070 M=C ALL	00F 15 0	
149 ?MC X0	190 LDR- 6	3D8 C>ST X	2CC ?FSET 13 0B0 C=N ALL	3D8 C>ST X	28C ?FSET 7	220 544	
024 ->0952	01C R= 3	17C RCR 6	03F JC \$+07 01C R= 3	17C RCR 6	2E7 JC \$-24	0B0 C=N ALL	
38B READ 14(d)	362 ?ABC BR	348 WRIT 14(d)	04C ?FSET 4 042 A>C BR	348 WRIT 14(d)	379 ?MC X0	106 A=C S=6	
3D8 C>ST X	09F JC \$+13	358 ST=C X	02F JC \$+05 190 LDR- 6	2B8 READ 10(+)	03C ->OFDE	1BC RCR 11	
00C ?FSET 3	36D ?MC X0	284 CLRF 7	398 C=ST X 01C R= 3	270 RAM SLCT	38D 909 M	146 A=A+C S=6	
02B JNC \$+05	08C ->2JDB	05B JNC \$+0B	348 WRIT 14(d) 362 ?ABC	362 ?ABC	3C1 ?MC X0	1A6 A=A-1 S=6	
3D8 C>ST X	21D 541 ]	222 C=C+1 BR	171 ?MC X0 097 JC \$+12	2FO WRITE DATA	0B0 ->2CF0	01E A=0 MS	
365 ?MC X0	18C ?FSET 11	362 ?ABC BR	01C ->075C 033 JNC \$+06	033 JNC \$+06	3BD ?MC X0	3A1 ?MC X0	
08C ->23D9	3B5 ?C X0	345 ?MC X0	28C ?FSET 7 0CE C=B ALL	0CE C=B ALL	01C ->07EF	014 ->05E8	
33D 829 =	051 ->14ED	040 ->10B1	027 JC \$+04 36D ?MC X0	36D ?MC X0	268 WRIT 9(Q)	097 151 W	JD9 ?MC X0
3D8 C>ST X	0EE C>B ALL	3B5 ?MC X0	365 ?MC X0 08C ->23D9	08C ->23D9	3B5 ?MC X0	020 32 01C ->07F6	
0B0 C=N ALL	0E8 WRIT 3(X)	08C ->23ED	08C ->23D9 21D 541 ]	21D 541 ]	08C ->23ED	013 19 S	3DD ?MC X0
13C RCR 8	3D8 READ 14(d)	10F 271 0	218 536 X 3D8 READ 14(d)	10F 271 0	003 3 C	0AC ->2BF7	
070 M=C ALL	13C RCR 8	3D8 READ 14(d)	3AD ?MC X0 13C RCR 8	13C RCR 8	0B0 C=N ALL	020 32 T	379 ?MC X0
01C R= 3	3D8 C>ST X	358 ST=C X	08C ->2JEB 3D8 C>ST X	226 C=C+1 S&X	014 20 T	03C ->OFDE	

## EB BLOCK

8	9	A	B	C	D	E	F
20B 523 K	03C RCR 3	05F JC \$+0B	22C ?FI 2 022 ->0899	358 ST=C X	19C R= 11	197 407 W	
04B JNC \$+09	146 A=A+C S&X	379 ?MC X0	360 TC RTN 106 A=C S&X	3E0 RTN	07C RCR 4	023 JNC \$+04	
013 JNC \$+02	146 A=A-1 S&X	03C ->OFDE	013 JNC \$+02 3C4 ST=0	130 LDI S&X	0EA C>B R<-	265 ?MC GO	
31B JNC \$-1D	13C RCR 8	06C 108 1	108 SETF 8 2D8 ST<T	191 401 Q	0CA C=B R<-	022 ->0899	
379 ?MC X0	306 ?A>C S&X	03B 59 ;	046 C=0 S&X 130 LDI S&X	2D8 ST<T	314 ?R= 1	148 SETF 6	
03C ->OFDE	017 JC \$+02	379 ?MC X0	3FO PRPH SLCT OFF 255 1	000 NOP	023 JNC \$+04	369 ?MC X0	
3EC 1004 1	288 SETF 7	03C ->OFDE	270 RAM SLCT 358 ST=C X	000 NOP	0CE C=B ALL	03C ->OFDA	
08C ?FSET 5	149 ?MC X0	3B3 947 3	3B8 READ 14(d) 10C ?FSET 8	000 NOP	268 WRIT 9(0)	0B5 181 5	
2CF JC \$-27	024 ->0952	369 ?MC X0	17C RCR 6 057 JC \$+0A	000 NOP	3E0 RTN	000 NOP	
3AB JNC \$-0B	378 READ 13(c)	03C ->OFDA	3D8 C>ST X 130 LDI S&X	266 C=C-1 S&X	3D4 R=R-1	000 NOP	
369 ?MC X0	03C RCR 3	3F5 1013 u	08C ?FSET 5 065 101 e	3D3 JNC \$-06	3D4 R=R-1	000 NOP	
03C ->OFDA	206 C=C+1 S&X	2B8 READ 10(+)	037 JC \$+06 2D8 ST<T	3A3 JNC \$-0C	3B3 JNC \$-0A	000 NOP	
341 833 A	046 A>C S&X	104 CLRF 8	3D8 C>ST X 000 NOP	0CE C=B ALL	3CC ?KEY	000 NOP	
0B0 C=N ALL	0B0 C=N ALL	2AB WRIT 10(+)	10C ?FSET 8 266 C=C-1 S&X	0CE C=R ALL	03B JNC \$+07	000 NOP	
1BC RCR 11	0BC RCR 5	3E0 RTN	3A0 ?MC RTN 3E8 JNC \$-03	0AE C>B ALL	36D ?MC X0	000 NOP	
106 A=C S&X	306 ?ACK S&X	104 CLRF 8	265 ?MC GO 0A6 A>C S&X	0CE C=R ALL	08C ->23DB	000 NOP	

## EC BLOCK

0	1	2	3	4	5	6	7
104 CLR 8 08C ?FSET 5	389 ?NC XQ	39C R= 0	070 N=C ALL	06D 109	■ 03C ->OFDE	27E C=C-1 MS	
04E C=0 ALL 02F JC #+05	08C ->23E2	058 B=C PR,+	0CE C=B ALL	0A6 A>C S&X	000 0	063 JNC #+0C	
270 RAM SLCT 391 ?NC XQ	0D9 217 Y	01E C=0 ALL	2A0 SETDEC	0B0 C=N ALL	10C ?FSET 8	3A1 ?NC XQ	
3B8 READ 14(d) 08C ->23E4	391 ?NC XQ	270 RAM SLCT	084 CLRF 5	13C RCR 8	03B JNC #+07	088 ->22E8	
JD8 C>ST X 06C 108 1	08C ->23E4	0F8 READ 3(X)	0ED ?NC XQ	0A6 A>C S&X	391 ?NC XQ	391 ?NC XQ	
08C ?FSET 5 031 49 1	3EC 1004 1	10E A=C ALL	064 ->193B	17C RCR 6	08C ->23E4	08C ->23E4	
013 JNC #+02 3C4 ST=0	363 JNC #+14	08E B=A ALL	10E A=C ALL	070 N=C ALL	38D 909 M	06C 108 1	
108 SETF 8 01C R= 3	098 152 X	379 ?NC XQ	130 LDI S&X	0C1 ?NC XQ	389 ?NC XQ	03B 59 ;	
3D8 C>ST X 190 LDPR- 6	014 20 T	03C ->OFDE	003 3 C	05C ->1730	08C ->23E2	391 ?NC XQ	
3E0 RTN 070 N=C ALL	004 4 D	06D 109 ■	206 C=C+1 S&X	0B0 C-N ALL	37E 894 *	08C ->23E4	
081 129 A 391 ?NC XQ	004 4 D	0DC R= 10	260 SETHX	0BC RCR 5	389 ?NC XQ	3B3 947 3	
014 20 T 08C ->23E4	00E 14 N	03C RCR 3	34E ?A00 ALL	0A6 A>C S&X	08C ->23E2	3ED ?NC GO	
004 4 D 20B 523 K	017 23 W	04A C=0 R<	033 JNC #+06	106 A=C S&X	363 867 C	08A ->22FB	
004 4 D 01B JNC #+03	3C4 ST=0	01C R= 3	046 A>C S&X	27C RCR 9	0AE A>C ALL	05E C=0 0	
00E 14 N 02B JNC #+05	048 SETF 4	190 LDPR- 6	379 ?NC XQ	070 N=C ALL	10E A=C ALL	384 CLRF 0	
017 23 W 39B JNC #+0D	398 C=ST X	226 C=C+1 S&X	03C ->OFDE	379 ?NC XQ	27E C=C-1 MS	046 C=0 S&X	

## EC BLOCK

8	9	A	B	C	D	E	F
270 RAM SLCT 00E 14 N	0AA A>C R<-	226 C=C+1 S&X	06C 108 1	3EC 1004 1	391 ?NC XQ	0CC ?FSET 10	
356 ?A00 XS 00C 12 L	328 WRIT 12(b)	070 N=C ALL	04E 78 *	0B0 C=N ALL	08C ->23E4	0DF JC #+1B	
360 ?C RTN 004 4 D	2F8 READ 11(a)	379 ?NC XQ	391 ?NC XQ	266 C=C-1 S&X	06C 108 1	149 ?NC XQ	
37C RCR 12 00E 14 N	0FC RCR 10	03C ->OFDE	08C ->23E4	2E6 ?C00 S&X	014 20 T	024 ->0952	
1A6 A=A-1 S&X 017 23 W	0AA A>C R<-	000 0 *	2F8 760 X	31B JNC #+1D	391 ?NC XQ	198 C=M ALL	
047 JC #+08 3C4 ST=0	2E8 WRIT 11(a)	10C ?FSET 8	046 C=0 S&X	391 ?NC XQ	08C ->23E4	268 WRIT 9(0)	
388 SETF 0 2C8 SETF 13	043 JNC #+08	067 JC #+0C	39C R= 0	08C ->23E4	3B3 947 3	149 ?NC XQ	
2FC RCR 13 2B8 SETF 7	082 130 B	28C ?FSET 7	058 G=C PR,+	07B 123 {	353 JNC #+16	044 ->2952	
1A6 A=A-1 S&X 34D ?NC XQ	015 21 U	033 JNC #+06	391 ?NC XQ	36B JNC #+13	362 ?A0C PR	09D ?NC XQ	
027 JC #+04 09C ->27D3	013 19 S	391 ?NC XQ	08C ->23E4	01C R= 3	01B JNC #+03	044 ->2927	
2FC RCR 13 01C R= 3	004 4 D	08C ->23E4	20E 526 N	090 LDPR- 2	204 CLRF 2	13C RCR 8	
1A6 A=A-1 S&X 2B8 READ 10(+)	00E 14 N	06C 108 1	073 JNC #+0E	01C R= 3	013 JNC #+02	10A A=C R<-	
333 JNC #+1A 10A A=C R<-	017 23 W	068 107 k	013 JNC #+04	102 A=C PR	208 SETF 2	149 ?NC XQ	
3E1 ?NC GO 338 READ 12(b)	3C4 ST=0	02B JNC #+05	023 JNC #+04	080 C=N ALL	0FC RCR 10	024 ->0952	
00A ->02F8 0AA A>C R<-	308 SETF 1	391 ?NC XQ	391 ?NC XQ	302 ?A0C PR	0EA C>B R<-	278 READ 9(0)	
08B 139 K 0FC RCR 10	04E C=0 ALL	08C ->23E4	08C ->23E4	04B JNC #+09	070 N=C ALL	158 M=C ALL	

## ED BLOCK

0	1	2	3	4	5	6	7
34D ?NC XQ 0CE C=B ALL	0CA C=B R<-	033 JNC #+06	JEE LSHFA ALL	0A6 A>C ALL	0EE C>B ALL	OCE C=B ALL	
0A4 ->29D3 268 WRIT 9(0)	04A C=0 R<-	19C R= 11	3EE LSHFA ALL	228 WRIT 8(P)	0A6 A>C ALL	2F0 WRITE DATA	
2ED ?NC XQ 0B0 C=N ALL	26A C=C-1 R<-	3EA LSHFA R<-	35E ?A00 MS	188 READ 6(N)	06E A>B ALL	06E A>B ALL	
0A4 ->29BB 0BC RCR 5	23E C=C+1 MS	3EA LSHFA R<-	3EB JNC #+03	37C RCR 12	2DE ?B#0 MS	28C ?FSET 7	
3D8 C>ST X 27E C=C-1 MS	01B JNC #+03	33B JNC #+19	0B0 C=N ALL	10A A=C R<-	32F JC #+1B	057 JC #+0A	
08C ?FSET 5 27E C=C-1 MS	278 READ 9(0)	313 JNC #+1E	0BC RCR 5	0A6 A>C ALL	0B0 C=N ALL	2DE ?B#0 MS	
02B JNC #+05 0EE C>B ALL	013 JNC #+02	19C R= 11	0DE C=B MS	1E8 WRIT 7(0)	2FE ?C#0 MS	043 JNC #+08	
3D8 C>ST X 00E A=0 ALL	023 JNC #+04	070 N=C ALL	178 READ 5(H)	0DB JNC #+17	0B0 C:N ALL	226 C=C+1 S&X	
389 ?NC XQ 17E A=A+1 MS	27E C=C-1 MS	023 JNC #+04	06E A>B ALL	37C RCR 12	0FE C>B MS	0B0 C:N ALL	
08C ->23E2 19C R= 11	18E A=A-1 MS	002 A=0 PR	238 READ B(P)	104 A=C R<-	0DE C=B MS	070 N=C ALL	
139 313 9 1AA A=A-1 R<-	19C R= 11	3D4 R=R-1	37C RCR 12	0A6 A>C ALL	27C RCR 9	391 ?NC XQ	
3D8 C>ST X 06E A>B ALL	0C2 C=B PR	162 A=A+1 PR	0A6 A>C ALL	1AB WRIT 6(N)	070 N=C ALL	08C ->23E4	
389 ?NC XQ 19B C=M ALL	06E A>B ALL	3E7 JC #+04	31C R= 1	0EE C>B ALL	24B JNC #+37	38D 909 M	
08C ->23E2 37C RCR 12	222 C=C+1 PR	1A2 A=A-1 PR	1F8 READ 7(0)	37C RCR 12	06E A>B ALL	37B JNC #+11	
135 309 5 31C R= 1	083 JNC #+10	04C ?FSET 4	37C RCR 12	10A A=C R<-	288 READ 10(+)	149 ?NC XQ	
260 SETHX 0EA C>B R<-	2DE ?B#0 MS	177 JC #+2E	10A A=C R<-	04A C=0 R<-	270 RAM SLCT	024 ->0952	

## ED BLOCK

8	9	A	B	C	D	E	F
3B8 READ 14(d) 342 ?A00 PR	266 C=C-1 S&X	166 A=A+1 S&X	198 C=M ALL	1DB JNC #+3B	198 C=M ALL	02B JNC #+05	
13C RCR 8 16F JC #+2D	106 A=C S&X	17E A=A+1 MS	0E0 SLCT 0	2BB JNC #+29	266 C=C-1 S&X	17E A=A+1 MS	
3D8 C>ST X 266 C=C-1 S&X	270 RAM SLCT	3CB JNC #+07	01C R= 3	29B JNC #+2D	270 RAM SLCT	3SE ?A00 MS	
388 SETF 0 106 A=C S&X	0CE C=B ALL	0B0 C=N ALL	162 A=A+1 PR	158 H=C ALL	0E0 SLCT 0	2E3 JNC #+24	
3D8 C>ST X 270 RAM SLCT	2F0 WRITE DATA	09C R= 5	162 A=A+1 PR	0B0 C=N ALL	0E0 SLCT 0	2EB JNC #+23	
17C RCR 6 198 C=M ALL	2DC R= 13	2E2 ?C#0 PR	077 JC #+0E	0FC RCR 10	2DC R= 13	17E A=A+1 MS	
3A8 WRIT 14(d) 2F0 WRITE DATA	1D0 LDPR- 7	0D3 JNC #+1A	0A0 SLCT P	102 A=C PR	038 READ 0(T)	3D4 R=R-1	
389 ?NC XQ 130 LDI S&X	1DE A=A-C MS	0FC RCR 10	3D4 R=R-1	198 C=M ALL	0B2 A>C P-Q	06E A>B ALL	
08C ->23E2 007 7 G	01C R= 3	3D4 R=R-1	0A6 A>C ALL	112 A=C P-Q	038 READ 0(T)	0AA A>C R<-	
3AF 943 / 33C RCR 1	390 LDPR- E	0AA A>C R<-	23C RCR 2	158 H=C ALL	2F0 WRITE DATA	0AA A>C R<-	
01C R= 3 1DE A=A-C MS	01C R= 3	0AA A=C R<-	0EE C>B ALL	038 READ 0(T)	198 C=M ALL	10A A=C R<-	
0B0 C=N ALL	06F JC #+0D	162 A=A+1 PR	07C RCR 4	0A0 SLCT P	10E A=C ALL	2F0 WRITE DATA	
0BC RCR 5 35E ?A00 MS	162 A=A+1 PR	070 N=C ALL	0EE C>B ALL	0AA A>C R<-	210 LDPR- 8	0EE C>B ALL	
11E A=C MS 0B3 JNC #+16	362 ?A0C PR	3E0 RTN	0E0 SLCT 0	10A A=C R<-	2DC R= 13	3DC R=R+1	
0BC RCR 5 046 A>C S&X	01F JC #+03	270 RAM SLCT	3AB JNC #+0B	2F0 WRITE DATA	0A0 SLCT P	266 C=C-1 S&X	
10A A=C R<- 106 A=C S&X	002 A=0 PR	2DC R= 13	323 JNC #+1C	3DC R=R+1	1DE A=A-C MS	270 RAM SLCT	