

Table F-3. Hex Addresses and Label References: CBM BASICs

BASIC 3.0	BASIC 4.0	Labels	Description
0000	0000	USRPOK	\$4C CONSTANT AND ADDRESS TO DISPATCH USR
0000	0000	ERRNF	ERROR CALL VALUE - ECV - NEXT WITHOUT FOR
0001	0001	ADDFRC	X
0002	0002	BUFFAG	INPUT BUFFER AT \$0200
0002	0002	ADDFR2	X
0003	0003	STRSIZ	NUMBER OF LOCS PER STRING DESCRIPTOR
0003	0003	INTEGR	ONE-BYTE INTEGER FROM "PRINT"
0003	0003	CHARAC	STARTING DELIMITER
0004	0004	ENDCHR	ENDING DELIMITER
0004	0004	ADDFR4	X
0005	0005	COUNT	GENERAL COUNTER FOR BASIC
0006	0006	DIMFLG	FLAG TO REMEMBER DIMENSIONED VARIABLES
0007	0007	VALTYP	FLAG FOR VARIABLE TYPE 0-NUMERIC \$FF-STRING
0008	0008	INTFLG	FLAG FOR INTEGER TYPE
0008	0008	ADDFR8	X
0009	0009	GARBFL	X
0009	0009	DORES	FLAG WHETHER CAN OR CAN'T CRUNCH RESERVED WORDS
000A	000A	CLMIND	SIZE OF PRINT WINDOW
000A	000A	SUBFLG	FLAG WHICH ALLOWS SUBSCRIPTS IN SYNTAX
000B	000B	INPFLG	FLAGS INPUT OR READ
000C	000C	DMASK	MASK USED BY RELATION OPERATIONS
000C	000C	TANSGH	FLAG SIGN OF TANGENT
000D	000D	DSDESC	DS# LENGTH AND POINTER TO DS#
000E	0010	CHANAL	ACTIVE I/O CHANNEL #
0010	0010	ERRSN	ERROR CALL VALUE - ECV - SYNTAX
0011	0011	POKER	HOLDS ADDRESS FOR POKE COMMAND
0011	0011	LINNUM	LINE NUMBER STORAGE
0012	0012	FORSIZ	AMOUNT OF BYTES USED ON STACK FOR-NEXT
0013	0013	TEMPPT	INDEX TO NEXT AVAILABLE DESCRIPTOR
0014	0014	LASTPT	POINTER TO LAST STRING TEMP LO:HI
0016	0016	TEMPST	STORAGE FOR NUMTRP TEMP DESCRIPTORS
0016	0016	ERRRG	ECV - RETURN WITHOUT GOSUB
0017	0017	NUMLEV	NUMBER OF GOSUB LEVELS ALLOWED
001E	001E	NCRPOS	X
001F	001F	INDEX	INDIRECT INDEX #1
001F	001F	INDEX1	SAME
0021	0021	INDEX2	INDIRECT INDEX #2
0023	0023	RESHO	RES -REGISTER
0024	0024	RESMOH	[
0025	0025	ADDEND	TEMP USED BY "MULT"
0025	0025	RESMO	[
0026	0026	RESLO	[
0028	0028	LINLEN	LENGTH OF SCREEN LINE 40-COL EDITORS
0028	0028	TXTTAB	POINTER TO START OF BASIC TEXT AREA
002A	002A	VARTAB	POINTER TO START OF VARIABLES
002A	002A	ERR00	ECV - OUT OF DATA
002C	002C	ARYTAB	POINTER TO START OF ARRAY TABLE
002E	002E	STREND	POINTER TO END OF VARIABLES
0030	0030	FRETOP	POINTER TO START OF REAL STRINGS
0032	0032	FRESPO	POINTER TO TOP OF FREE STRING SPACE
0034	0034	MEMSIZ	HIGHEST RAM ADDR AVAILABLE FOR BASIC
0035	0035	ERRFC	ECV - ILLEGAL QUANTITY
0036	0036	CURLIN	CURRENT LINE BEING EXECUTED
0038	0038	OLDLIN	LAST LINE EXECUTED (FOR CONT COMMAND)
003A	003A	OLDTPT	OLD TXTPTR (FOR CONT COMMAND) AND TEMP STORAGE
003C	003C	DATLIN	DATA LINE # FOR ERRORS

Table F-3. Hex Addresses and Label References: CBM BASICs (Continued)

BASIC 3.0	BASIC 4.0	Labels	Description
003E	003E	DATPTR	DATA STATEMENT POINTER
0040	0040	INPTR	SOURCE OF INPUT ADDRESS
0042	0042	VARNAM	CURRENT VARIABLE NAME
0044	0044	FDECPY	POINTER INTO POWERS OF TEN FOR FOUT
0044	0044	VARPNT	POINTER TO VARIABLE IN MEMORY
0045	0045	ERR0V	ECV - OVERFLOW
0046	0046	LSTPNT	PNTN TO LIST STRING
0046	0046	ANDMSK	THEN MASK USED BY WAIT FOR ANDING
0046	0046	FORPNT	POINTER TO CURRENT FOR-NEXT VARIABLE REFERENCE
0047	0047	EDRMSK	THE MASK FOR EDITING IN WAIT
0048	0048	VARTXT	POINTER INTO LIST OF VARIABLES
0048	0048	OPPTR	POINTER TO CURRENT OPERATOR IN TABLE
004A	004A	OPMSK	MASK CREATED BY CURRENT OPERATOR
004B	004B	GARBNT	POINTER USED IN GARBAGE COLLECTION
004B	004B	TEMPF3	A THIRD FAC TEMPORARY 4-BYTES
004B	004B	DEFPNT	POINTER USED IN FUNCTION DEFINITION
004D	004D	DSCPNT	POINTER TO A STRING DESCRIPTION
004D	004D	ERR0N	ECV - OUT OF MEMORY
0050	0050	FOUR3	VARIABLE CONSTANT USED BY GARB COLLECT
0051	0051	BUFLEN	INPUT BUFFER MAX SIZE+1
0051	0051	JMPER	\$4C CONSTANT AND ADDRESS USED TO DISPATCH FUNCS
0052	0052	SIZE	X
0053	0053	OLD0V	THE OLD OVERFLOW
0054	0054	TEMPF1	A FAC TEMP 4-BYTES
0055	0055	ARYPNT	A POINTER USED IN ARRAY BUILDING
0055	0055	HIGH05	DESTINATION OF HIGHEST ELEMENT IN BLT.
0057	0057	HIGHTR	SOURCE OF HIGHEST ELEMENT TO MOVE
0059	0059	TEMPF2	A FAC TEMP 4-BYTES
005A	005A	DECCNT	NUMBER OF PLACES BEFORE DECIMAL POINT
005A	005A	LOW05	LOCATION OF LAST BYTE TRANSFERRED INTO
005A	005A	ERR0S	ECV - UNDEF'D STATEMENT
005B	005B	TENEXP	BASE TEN EXPONENT FOR FIN AND FOUT
005C	005C	GARBTP	A POINTER USED IN GARBAGE COLLECTION
005C	005C	DPTFLG	FLAG IF A DECIMAL POINT HAS BEEN INPUT
005C	005C	LOWTR	LAST THING TO MOVE IN BLT.
005D	005D	EXP0GN	SIGN OF BASE TEN EXPONENT
005D	005D	EP0GN	X
005E	005E	DSCTHP	THIS IS WHERE TEMP DESCS ARE BUILT
005E	005E	FAC	THE MAIN FLOATING POINT ACCUMULATOR
005E	005E	FACEXP	THE EXPONENT BYTE
005F	005F	FAC0H	[MOST SIGNIFICANT BYTE OF MANTISSA
0060	0060	FAC0H	[ONE MORE
0061	0061	INDICE	INDICE IS SET UP HERE BY "PRINT"
0061	0061	FACMO	[MIDDLE ORDER OF MANTISSA
0062	0062	FACLO	[LEAST SIG BYTE OF MANTISSA
0063	0063	FAC0GN	SIGN OF FAC (0 OR -1) WHEN UNPACKED
0064	0064	DEGREE	A CONT USED BY POLYNOMIALS
0064	0064	SGNFLG	SIGN OF FAC IS PRESERVED HERE BY FIN
0065	0065	BITS	COUNTER FOR # OF BIT SHIFTS TO NORMALIZE FAC
0066	0066	ARGEXP	THE ARG REGISTER EXPONENT
0067	0067	ARG0H	[
0068	0068	ARG0H	[
0069	0069	ARG0H	[
006A	006A	ARGLO	[
006B	006B	ARG0GN	THE SIGN (SAME AS FAC)
006B	006B	ERR0S	ECV - BAD SUBSCRIPT

Table F-3. Hex Addresses and Label References: CBM BASICs (Continued)

BASIC 3.0	BASIC 4.0	Labels	Description
006C	006C	STRNG1	POINTER TO A STRING OR DESCRIPTOR
006C	006C	ARISGN	A SIGN REFLECTING THE RESULT
006D	006D	FACOV	OVERFLOW BYTE OF THE FAC
006E	006E	BUFPTR	POINTER TO BUF USED BY "CRUNCH ROUTINE"
006E	006E	STRNG2	POINTER TO STRING OR DESC.
006E	006E	POLYPT	POINTER INTO POLYNOMIAL COEFFICIENTS.
006E	006E	CURTOL	ABSOLUTE LINEAR INDEX IS FORMED HERE
006E	006E	FBUFPTR	POINTER INTO FBUFFER USED IN FOUT.
0070	0070	CHRGET	ROUTINE - GETS NEXT CHARACTER FROM BASIC TEXT
0076	0076	CHRGOT	ROUTINE -REGETS CURRENT CHARACTER FROM BASIC TEXT
0077	0077	TXTPTR	POINTER TO CURRENT SOURCE TEXT
0078	0078	ERRDD	ECU - REDIM'D ARRAY
007D	007D	QNUM	LABEL IN CHRGET
0080	0080	ENDTK	TOKEN - END
0081	0081	FORK	TOKEN - FOR
0083	0083	DATATK	TOKEN - DATA
0085	0085	ERRDDV	ECU - DIVISION BY ZERO
0087	0087	CHRTS	LABEL IN CHRGET
0088	0088	RNDX	NEXT RANDOM NUMBER - INITIAL LOAD FROM ROM
0089	0089	GOTOK	TOKEN - GOTO
008B	008B	ZZ7	X
008D	008D	CTIMR	24 HR CLOCK 1/60 OF SEC
008D	008D	GOSUTK	TOKEN - GOSUB
008F	008F	RENTK	TOKEN - REH
0095	0095	ERRID	ECU - ILLEGAL DIRECT
0096	0096	OSTAT	I/O OPERATION STATUS BYTE (VARIABLE ST)
0099	0099	PRINTK	TOKEN - PRINT
00A2	00A2	SCRATK	TOKEN - NEW
00A3	00A3	TABTK	TOKEN - TAB
00A3	00A3	ERRTM	ECU - TYPE MISMATCH
00A4	00A4	TOTK	TOKEN - TO
00A5	00A5	FNTK	TOKEN - FN
00A6	00A6	SPCTK	TOKEN - SPC
00A7	00A7	THENTK	TOKEN - THEN
00A8	00A8	NOTTK	TOKEN - NOT
00A9	00A9	STEPTK	TOKEN - STEP
00AA	00AA	PLUSTK	TOKEN - +
00AB	00AB	MINUTK	TOKEN - -
00B0	00B0	ERRLS	ECU - STRING TOO LONG
00B1	00B1	GREATK	TOKEN - >
00B2	00B2	EGULTK	TOKEN - =
00B3	00B3	LESSTK	TOKEN - <
00B4	00B4	ONEFUN	TOKEN - 5GH START OF SINGLE PARAM FUNCTIONS
00BF	00BF	ERRBD	ECU - FILE DATA
00C6	00C6	TRMPOS	X
00C7	00C7	LASNUM	TOKEN - CHR# LAST FUNC WITH ARITHMETIC PARAMS
00C8	00C8	ERRST	ECU - FORMULA TOO COMPLEX
00CB	00CB	GOTK	TOKEN - GO (GO TO)
00DB	00DB	ERRCN	ECU - CAN'T CONTINUE
00E9	00E9	ERRUF	ECU - UNDEF'D FUNCTION
00FF	00FF	PI	VALUE OF PI SYMBOL
00FF	00FF	LOFBUF	START OF FOUT STRING FOR STRD AND TI\$
0100	0100	FBUFPTR	FOUT BUFFER HOLDS ASCII STRING FOR OUTPUT
01FB	01FB	STKEND	TOP OF STACK FOR BASIC
01FF	01FF	Z21	X
01FF	01FF	Z25	X

Table F-3. Hex Addresses and Label References: CBM BASICs (Continued)

BASIC 3.0	BASIC 4.0	Labels	Description
01FF	01FF	Z24	X
0200	0200	BUF	BASIC INPUT BUFFER (80 CHARACTERS-BYTES LONG)
0200	0200	BUFOFS	SAME AS ABOVE
0201	0201	Z22	X
0202	0202	Z23	X
0400	0400	RAMLOC	BEGINING OF RAM AVAILABLE FOR BASIC TEXT
0000	0000	OFFSET	*VALUE USED IN ASSEMBLY - ROM VERSION
0000	0000	Z28	X
0000	0000	ROMLOC	BEGINING OF BASIC ROMS -U2=\$C000 U4=\$E000
0000	0000	STNDSP	START OF COMMAND DISPATCH TABLE
0046	0046	FUNDSP	START OF FUNCTION DISPATCH TABLE
004C	004C	USRLOC	X
0074	0074	OPTAB	START OF MATH OPERATORS DISPATCH TABLE
0089	0089	NEGTAB	UNITARY NEGATE DISPATCH (.BYTE 125,DISPATCH)
008C	008C	NOTTAB	NOT OPERATOR DISPATCH (.BYTE 90,DISPATCH)
008F	008F	PTOORL	COMPARISON DISPATCH (.BYTE 100,DISPATCH)
0092	0092	RESLST	START OF RESERVED WORD LIST (ASCII,END(OR \$80))
0192	0200	ERRTAB	START OF BASIC ERROR MESSAGE STORAGE
0268	0300	ERR	MESSAGE - "ERROR"
0292	0300	INTXT	MESSAGE - "IN"
0297	0312	REDDY	MESSAGE - "READY"
02A2	0318	BRKXT	MESSAGE - "BREAK"
02AA	0322	FNDFOR	PEEKs AT THE STACK FOR AN ACTIVE "FOR" LOOP
02AF	0327	FFLOOP	X
02C4	033C	CHPFOR	X
02D0	0348	ADDFRS	X
02D7	034F	FFRTS	X
02D8	0350	BLTU	"OPENS UP" A SPACE IN BASIC FOR A NEW LINE
02DF	0357	BLTUC	X
02FC	0374	BLTI	X
0308	0380	BLTLP	X
030C	0384	MOREN1	X
0313	0388	DECBLT	X
031B	0393	GETSTK	TEST FOR STACK-TOO-DEEP ERROR
0328	039A	REASON	CHECKS FOR AVAILABLE MEMORY SPACE
0332	039A	TRYMOR	X
0336	039E	REASAV	X
0341	03B9	REASTO	X
0354	03CC	REARTS	X
0355	03CC	OHERR	OUT OF MEMORY ERROR VECTOR
0357	03CF	ERRR	ERROR HANDLER (ERROR TYPE IN .X)
0364	03DA	ERRCRD	X
036A	03E0	GETERR	X
0000	03ED	TYPERR	PRINTS OUT THE ERROR MESSAGE
037E	03F4	ERRFIN	X
0389	03FF	READY	PRINTS "READY," GOES INTO MAIN BASIC LOOP (+ NMI)
0392	0406	MAIN	MAIN BASIC LOOP, ANALYZES INPUT LINES
039B	041F	MAIN1	LINES THAT START WITH A NUMBER HANDLED HERE
03E6	045A	ODECT1	X
03EE	0462	HLOOP	X
03FC	0470	MODEL	X
0417	0488	MODEL0	X
0431	04A5	STOLOP	X
0439	04A0	FINI	CLEARs BASIC SYSTEM UP; CLR
0442	04B6	LNKPRG	RELINKS BASIC STATEMENTS IN TEXT AREA
044B	04BF	CHRD	X

Table F-3. Hex Addresses and Label References: CBM BASICs (Continued)

BASIC 3.0	BASIC 4.0	Labels	Description
C453	B4C7	CZLOOP	X
C46E	B4E1	LNKRTS	X
C46F	B4E2	INLIN	INPUT A LINE OF INFORMATION INTO BUF (MAX 80 CHARS)
C471	B4E4	INLINC	X
C47E	B4F6	FININI	X
C495	B4FB	CRUNCH	LOOKS UP KEYWORDS IN AN INPUT LINE
C496	B501	KLOOP	X
C4A7	B50D	CHPSPC	X
C4B0	B523	KLOOP1	X
C4C5	B52B	MUSTCR	X
C4CF	B53D	RESER	X
C4D1	B544	RESOON	X
C4E0	B552	GETBPT	X
C4E2	B554	STUFFH	X
C4F5	B567	COLIS	X
C4F7	B569	NOORAT	X
C4FE	B570	STR1	X
C507	B579	STRNG	X
C50E	B580	NTHIS	X
C512	B584	NTHIS1	X
0000	B58D	NTHIS2	X
C522	B599	CRDNE	X
C52C	B5A3	FNDLIN	SEARCHES FOR A LINE NUMBER (NUMBER IN LINNUM)
C530	B5A7	FNDLNC	X
C547	B5BE	FNDL01	X
C550	B5C7	AFFRT5	X
C559	B5D0	FLINRT	X
C55A	B5D1	FLINRT5	X
C55B	B5D2	SCRATH	IMPLEMENTS "NEW" COMMAND - CLEARS EVERY THING
C55D	B5D4	SCRTOH	X
C572	B5E9	RUNC	X
C577	B5EE	CLEAR	CLR - ROUTINE
C579	B5F0	CLEARC	X
0000	B606	FLORD	X
C593	B60E	STKINI	X
C5A6	B621	STHRT5	X
C5A7	B622	TXTPTR	TXTPTR=TXTTAB-1
C5B5	B630	LIST	ROUTINE - LIST
C5B0	B638	GOLST	X
C5D4	B64F	LSTEND	X
C5E2	B65D	LIST4	X
C5FF	B67A	TSTOUN	X
C601	B67C	TYPLIN	X
C606	B683	PRIT4	X
C60C	B687	PL00P	X
C619	B694	PL00P1	X
C62D	B6A8	GR00V	X
C630	B6AB	OPLOP	X
C642	B6C5	RESRCH	X
C645	B6C8	RESCR1	X
0000	B6CE	RESCR2	X
C640	B6D4	PRIT3	X
0000	B6D5	PRIT3B	X
C658	B6DE	FOR	ROUTINE - FOR
C669	B6EF	NOTOL	X
C6A1	B727	LDPHONE	X

Table F-3. Hex Addresses and Label References: CBM BASICs (Continued)

BASIC 3.0	BASIC 4.0	Labels	Description
C665	B736	ONEON	X
C664	B74A	NEWSTT	MAIN STATEMENT DISPATCH LOOP (DO NEXT STATEMENT)
C6D4	B759	DIRCON	X
C6E4	B769	DIRCN1	X
C6F7	B77C	GONE	DISPATCHES NEXT BYTE CHRGET RETURNS
C700	B785	GONE3	DISPATCHES .A IF NONZERO ELSE LOOP TO NEWSTT
C702	B787	GONE2	X
0000	B795	GONE4	X
C717	B7A2	GLET	X
C71A	B7A5	MORST5	X
C71E	B7A9	SNERR1	SYNTAX ERROR VECTOR
0000	B7AC	GO	HANDLE GO TOKEN CASE (FIND A TO)
C730	B7B7	RESTOR	ROUTINE - RESTORE
C73A	B7C1	RESFIN	X
C73E	B7C5	ISCRIS	X
C73F	B7C6	STOP	STOP - SEC END - CLC
C741	B7C8	END	ROUTINE - END
C742	B7C9	STOPC	ROUTINE - STOP
C751	B7D6	STPEND	X
C759	B7E0	DIRIS	X
C756	B7E2	ENDCON	X
C768	B7EB	GORDV	JMP READY
C768	B7EE	CONT	ROUTINE - CONT
C784	B807	CONTRT	X
C785	B808	RUN	ROUTINE - RUN
C790	B813	GOSUB	ROUTINE - GOSUB
C7A4	B827	RUNC2	X
C7A0	B830	GOTO	ROUTINE - GOTO
C7C4	B847	LUK4IT	X
C7C6	B84B	LUKALL	X
C7D9	B850	GORTS	X
C7DA	B85D	RETURN	ROUTINE - RETURN
C7EB	B86E	USERR	BAD SUBSCRIPT ERROR VECTOR
C7F0	B873	SNERR2	SYNTAX ERROR VECTOR
C7F3	B876	RETU1	X
C800	B883	DATA	X
C803	B886	ADDON	X
C800	B890	REHRTS	X
C80E	B891	DATAN	SEARCH FOR NEXT "
C811	B894	REMN	LOOK FOR EOL(\$00) (TXTPTR OFFSET IN .Y)
C819	B89C	EXCHOT	X
C821	B8A4	REMER	X
C830	B8B3	IF	ROUTINE - IF
C83F	B8C2	ONGOTO	X
C843	B8C6	REM	ROUTINE - REM
C848	B8C8	DOCOND	X
C850	B8D3	DOCO	X
C853	B8D6	ONGOTO	ROUTINE - ON (GOTO OR GOSUB)
C856	B8DE	SNERR3	SYNTAX ERROR VECTOR
C85F	B8E2	ONGLOP	X
C867	B8EA	ONGLP1	X
C872	B8F5	ONGRTS	X
C873	B8F6	LINGET	INPUT A BASIC LINE NUMBER (0-65599)(VALUE IN LINNUM)
C879	B8FC	MORLIN	X
C8A7	B92A	NXTLGC	X
C8A0	B930	LET	ROUTINE - LET

Table F-3. Hex Addresses and Label References: CBM BASICs (Continued)

BASIC 3.0	BASIC 4.0	Labels	Description
C8CA	B940	QINTGR	X
C8DE	B941	COPFLT	X
C8E1	B944	COPSTR	X
C8E2	B945	INPCOM	X
C8F5	B978	TINELP	X
C90F	B992	NOML6	X
C91F	B9A2	TIMEST	X
C928	B9AB	TIMNUM	X
C92F	B9B2	FCERR2	ILLEGAL QUANTITY ERROR VECTOR
C932	B9B5	GOINUM	X
C937	B9BA	GETSPT	COPY STRINGS IF NEEDED
0000	B9BE	DSKX0	X
0000	B9D2	DSKX1	X
0000	B9D4	DSKX2	X
C948	B9E1	QUARIA	X
C956	B9EF	DNTPCY	X
C95D	B9F6	COPY	X
C973	BA13	COPYC	X
0000	BA2E	COPY00	X
0000	BA44	COPY01	X
0000	BA46	COPY02	X
0000	BA4E	STRADJ	POINT TO STRING FOR A COPY
0000	BA6C	ADJ	X
0000	BA70	ADJXX	X
0000	BA74	ADJ02	X
0000	BA83	ADJ00	X
0000	BA85	ADJ01	X
C988	BA88	PRINTN	ROUTINE - PRINT#
C991	BA8E	CMD	ROUTINE - CMD
C99B	BA98	SAVEIT	X
C9A5	BAA2	STRD0N	X
C9A8	BAA5	NEWCHR	X
C9AB	BAAB	PRINT	ROUTINE - PRINT
C9AD	BAAB	PRINTC	X
C9D5	BA02	FININL	X
C9E2	BA0F	CRDO	OUTPUT A CARRIAGE RETURN (END OF LINE)
C9EC	BAED	CRFIN	X
C9EE	BAEF	PRTRTS	X
C9EF	BAF0	COMPRT	X
C9F2	BAF3	MORC01	X
C9FC	BAFD	TABER	TAB AND SPC HANDLER
CA0C	BB0D	ASPC	X
CA0D	BB0E	XSPAC	X
CA0E	BB0F	XSPAC2	X
CA11	BB12	NOTABR	X
CA17	BB18	XSPAC1	X
CA1C	BB1D	STRDUT	PRINT STRING FROM ADDRESS IN .Y AND .A
CA1F	BB20	STRPRT	PRINT STRING POINTED TO BY INDEX
CA26	BB27	STRPR2	X
CA39	BB3A	OUTSPC	OUTPUT A SPACE
CA40	BB41	CRTSKP	OUTPUT A \$10
CA43	BB44	OUT05T	OUTPUT A ?
CA45	BB46	OUTD0	OUTPUT THE CHAR IN .A
CA4C	BB49	OUTRTS	X
CA4F	BB4C	TRNNOK	HANDLES BAD INPUT DATA
CA59	BB56	GETDTL	X

Table F-3. Hex Addresses and Label References: CBM BASICs (Continued)

BASIC 3.0	BASIC 4.0	Labels	Description
CA5D	BB5A	STCURL	X
CA61	BB5E	SNERR4	SYNTAX ERROR VECTOR
CA64	BB61	TRNN01	X
CA6D	BB6A	D0RGIN	X
CA7D	BB7A	GET	ROUTINE - GET OR GET#
CA94	BB91	GETTTY	X
CA97	BB94	INPUTN	ROUTINE - INPUT#
CA87	BB84	IODONE	RESTORE INPUT TO KEYBOARD
CA89	BB86	IORELE	X
CA01	BB8E	INPUT	ROUTINE - INPUT
CA02	BB8D	NOTATI	X
CA0A	BB05	GETAGN	X
CAED	BB88	BUFFUL	X
0000	BBF1	PTHRTI	X
CAFA	BBF5	QINLIN	PROMPTS AND RECEIVES THE INPUT
CB04	BBFF	GINLIN	X
CB07	BC02	READ	ROUTINE - READ
CB0E	BC09	INPCON	X
CB10	BC0B	INPC01	X
CB16	BC11	INLOOP	X
CB42	BC3D	QDATA	X
CB48	BC46	GETNTH	X
CB4E	BC49	DATBK	X
CB52	BC4D	DATBK1	X
CB66	BC61	SETOUT	X
CB72	BC6D	RESETC	X
CB73	BC6E	NONGET	X
CB7E	BC79	NONGE1	X
CB8A	BC85	NUMINS	X
CB92	BC8D	STRD02	X
CB9E	BC99	TRMOK	X
CB89	BC84	DATL0P	X
CB02	BC0D	NONLIN	X
CB0F	BC0A	VAREND	X
CB8A	BC05	VARY0	PRINT "EXTRA IGNORED " IF KEYBOARD AND A SEPARATOR
CBFB	BCFB	INPRTS	X
CBFC	BCF7	EXIGNT	MESSAGE - EXTRA IGNORED
CC0D	BD07	TRYAGN	MESSAGE - ?REDO FROM START
CC20	BD19	NEXT	ROUTINE - NEXT
CC26	BD1F	GETFOR	X
CC29	BD22	STXFOR	X
CC34	BD2D	ERRG05	X
CC36	BD2F	HAUFOR	X
CC76	BD6F	NEWSG0	X
CC79	BD72	LOOP0N	CHECKS DATA FORMAT
CC88	BD84	FRNNUM	JMP FRMVL
CC8E	BD87	CHKNUM	CHECK THAT CURRENT TYPE IS NUMERIC
CC90	BD89	CHKSTR	CHECK THAT CURRENT TYPE IS STRING (CHK5 VALTYP)
CC91	BD8A	CHKVAL	X
CC97	BD90	CHKOK	X
CC98	BD91	DOCSTR	X
CC9A	BD93	CHKERR	TYPE MISMATCH ERROR VECTOR
CC9C	BD95	ERRG04	X
CC9F	BD98	FRMVL	FORMULA EVALUATOR - EVALUATES ALL FORMULAS
CC85	BD9E	FRMVL1	X
CC8A	BD93	LPOPER	X

Table F-3. Hex Addresses and Label References: CBM BASICs (Continued)

BASIC 3.0	BASIC 4.0	Labels	Description
CCB9	B0B2	TSTOP	X
CCBC	B0B5	LOPREL	X
CCD8	B0D1	ENDREL	X
CCF1	B0EA	OPREC	X
CCFA	B0F3	DOPREC	X
CCFB	B0F4	NEGPRO	X
CD08	BE01	FINREL	X
CD12	BE0B	FINRE2	X
CD1A	BE13	OPREC1	X
CD21	BE1A	DOPRE1	PUSHES A PARTIAL EVALUATION ON THE STACK
CD31	BE2A	SNERR5	SYNTAX ERROR VECTOR
CD34	BE2D	PUSHF1	X
CD39	BE32	PUSHF	X
CD44	BE41	FORPSH	X
CD59	BE56	QOP	X
CD5C	BE59	QOPG0	X
CD5E	BE5B	QCHNUM	X
CD65	BE62	UNPSTK	X
CD67	BE64	PULSTK	RESTORE ARG FROM STACK (PUSHED EVALUATION)
CD81	BE7E	QOPRT5	X
CD83	BE80	UNPRT5	X
CD84	BE81	EVAL	EVALUATES NUMERIC FORMULAS
CD88	BE85	EVAL0	X
CD8D	BE8A	EVAL1	X
CD90	BE8D	EVAL2	X
CDAB	BEA0	PIVAL	STORAGE - THE BINARY VALUE OF PI
CDAB	BEA5	QDOT	X
CD88	BE85	STRXT	IMMEDIATE STRINGS HANDLER
CD01	BE8E	STRXT2	X
CD07	BE04	EVAL3	X
CD0F	BE0C	NOTOP	EVAL - NOT
CDDE	BE08	EVAL4	X
CDEC	BE09	PARCHK	EVALUATE A FUNCTION WITHIN ()'S (FRAMEVL)
CDF2	BE0F	CHKCLS	CHECK FOR RIGHT PARENTHESIS)
CDF5	BEF2	CHKOPN	CHECK FOR LEFT PARENTHESIS (
CDF8	BEF5	CHKCOM	CHECK FOR A COMMA
CDFA	BEF7	SYNCHR	COMPARE TXTPTR AGAINST ,A IF <> THEN...
CE03	BF00	SNERR	...SYNTAX ERROR VECTOR
CE08	BF05	DOMIN	SET UP FUNCTION FOR FUTURE EVALUATION
CE0A	BF07	GONPRC	X
0000	BF0C	CKSMB0	THE CHECKSUM BYTE FOR THE \$B000 ROM
0000	BF0D	ISUJMP	JMP ISVAR
0000	BF10	PAB00	PATCHES
0000	BF10	PATCHG	P
0000	BF1D	PCTH0	P
0000	BF1E	PCTH1	P
0000	BF21	PATCHH	P
0000	BF2E	PATCHI	P
CE0F	BF8C	ISVAR	SET UP A VARIABLE NAME SEARCH
CE11	BF8E	Z26	X
CE12	BF8F	ISURET	X
0000	BFC1	ISUDS	DS\$ TEST AND HANDLER
CE42	BFD3	STRRT5	X
CE43	BFD4	G000	X
CE54	BFE5	G00000	X
0000	BFFC	CHKDS	CHECK FOR A DS VARIABLE

Table F-3. Hex Addresses and Label References: CBM BASICs (Continued)

BASIC 3.0	BASIC 4.0	Labels	Description
CE69	C003	GETTIM	ASSIGN TIME TO TI
CE75	C00F	QSTATV	X
0000	C01C	QDSAV	X
CE82	C040	GOMOVF	X
CE89	C047	ISFUN	DISPATCH AND EVAL IF IT'S A FUNCTION
CEB3	C071	OKNORM	X
CEB8	C076	FINGO	PLACE FUNCTIONS DISPATCH ADDRESS IN JUMPER AND GO
CEC8	C086	OROP	EVAL - OR
CECB	C089	ANDOP	EVAL - AND
CEFB	C0B6	DOREL	DO COMPARISONS
CF10	C0CE	STRCMP	X
CF38	C0F6	STASGN	X
CF3D	C0FB	NXTCMP	X
CF43	C101	QCOMP	X
CF48	C106	GETCMP	X
CF54	C112	DOCMP	X
CF5D	C11B	GOFLOT	X
CF60	C11E	DIMS	MULTIPLE DIM RE-ENTRY (CHKs FOR A COMMA)
CF63	C121	DIM	ROUTINE - DIM
CF6D	C126	PTARGET	SEARCHES FOR A BASIC VARIABLE
CF72	C130	PTRG1	X
CF74	C132	PTRG2	X
CF7E	C13C	INTERR	SYNTAX ERROR VECTOR
CF81	C13F	PTRG3	X
CF91	C14F	ISSEC	X
CF92	C150	EATEM	X
CF9C	C15A	NOSEC	X
CFA6	C164	NOTSTR	X
CFB6	C174	TURNON	X
CFB0	C17B	STRNAM	X
CFD3	C18F	STXEND	X
CFD5	C191	LOPFND	X
CFDF	C19B	LOPFN	X
0000	C1AB	NXTPTR	MOVE SEARCH TO NEXT TABLE ENTRY
CFED	C1AC	NOTIT	X
CF77	C1B6	ISLETC	X
D000	C1BF	ISLRTS	X
D001	C1C0	NOTFNS	DID NOT FIND VARIABLE - CREATE A NEW ONE
D007	C1C6	LDZR	X
D00C	C1CB	NOTEVL	X
D01C	C1D8	GOBADV	X
D01F	C1DE	QSTAVR	CHECK FOR ST CASE
0000	C1E6	QDSVAR	CHECK FOR DS CASE
D027	C1F2	VAROK	GOOD USABLE VARIABLE
D03D	C208	NOTEVE	X
D448	C21C	ARYVAR2	X
D44C	C220	ARYVAR3	X
D457	C228	ARYUGO	SEARCH THE ARRAYS
D488	C259	ARYGET	MOVE THRU THE ARRAY TABLES
D492	C263	GOGO	X
0000	C281	GOGO1	X
D4D0	C290	DUART5	X
0000	C29D	ARYDON	X
D069	C2B9	FINPTR	LOGS BASIC VARIABLE LOCATION
D073	C2C3	FINNOW	X
D078	C2C8	FINPTR	ARRAY POINTER SUBROUTINE

Table F-3. Hex Addresses and Label References: CBM BASICs (Continued)

BASIC 3.0	BASIC 4.0	Labels	Description
D084	C2D4	JSRGM	X
D089	C2D9	N32768	STORAGE - THEN BINARY VALUE -32768
D08D	C2DD	INTIDX	EVALUATE FORMULA RESULT IS POSITIVE INTEGER VALUE
D093	C2E3	POSINT	CONVERT FLOATING BINARY TO POSITIVE INTEGER
D09A	C2EA	AYINT	CONVERT FLOATING BINARY TO INTEGER
D0A7	C2F7	NONONO	ILLEGAL QUANTITY ERROR VECTOR
D0A9	C2F9	QINTG0	JMP QINT
D0AC	C2FC	ISARY	LOCATES AND/OR CREATES ARRAYS
D0B6	C306	INDLOP	X
D0F7	C347	LOPFDA	X
D103	C353	LOPFDA	X
D112	C362	NMARY1	X
D120	C370	BSERR	BAD SUBSCRIPT ERROR VECTOR
D123	C373	FCERR	ILLEGAL QUANTITY ERROR VECTOR
D125	C375	ERRG03	X
D128	C378	GOTARY	X
D13C	C38C	NOTFDD	X
D150	C39F	NOTFLT	X
D159	C3A8	STOMLT	X
D162	C3B1	LOPPTA	X
D172	C3C1	NOTDIM	X
D195	C3E4	GREASE	X
D1A4	C3F3	ZERITA	X
D1A9	C3F8	DECCUR	X
D1C6	C415	GETDEF	X
D1CE	C41D	INLPNM	X
D1E4	C433	BSERR7	SYNTAX ERROR VECTOR
D1E7	C436	OMERR1	OUT OF MEMORY ERROR VECTOR
D1EA	C439	INLPN2	X
D1EB	C43A	INLPN1	X
D1FC	C44B	ADDIND	X
D20D	C45C	NOTFL1	X
D213	C462	STOML1	X
D227	C476	DIMRTS	X
D228	C477	UMULT	INTEGER ARITHMETIC ROUTINES FOR MULTI-DIM ARRAYS
D231	C480	UMULTD	X
D238	C48A	UMULTC	X
D254	C4A3	UMLCNT	X
D258	C4A7	UMLRTS	X
D259	C4A8	FRE	ROUTINE - FRE(X)
D260	C4AF	NOFREF	X
D26D	C4BC	GIUAYF	CONVERTS INTEGER TO FLOATING BINARY
D27A	C4C9	POS	ROUTINE - POS(X)
D27C	C4CB	SNGFLT	X
D280	C4CF	ERRDIR	IF COMMAND TYPE IS INDIRECT ONLY - ILLEGAL DIRECT
D288	C4D7	ERRGUF	UNDEFINED FUNCTION ERROR VECTOR
D28D	C4DC	DEF	ROUTINE - DEF FN()=
D2BB	C50A	GETFNM	X
D2CE	C51D	FND0ER	EVALUATES FN() IN FORMULAS
D2F2	C541	DEFSTF	X
D329	C578	DEFFIN	X
D33F	C58E	STRD	ROUTINE - STR\$
D349	C598	TIMSTR	MAKE A STRING OUT OF INFO AT \$01FF
D34F	C59E	STRINI	MAKE A STRING OUT OF (FACMO POINTER)
D357	C5A6	STRSPA	X
D361	C5B0	STRLIT	SCANS AND SETS UP STRING ELEMENTS

Table F-3. Hex Addresses and Label References: CBM BASICs (Continued)

BASIC 3.0	BASIC 4.0	Labels	Description
D367	C5B6	STRLT2	X
D371	C5C0	STRGET	X
D37E	C5CD	STRFIN	X
D382	C5D1	STRF11	X
D383	C5D2	STRF12	X
D38F	C5DE	STRST2	X
D399	C5E8	STRCP	X
D3A4	C5F3	PUTHEW	CHECK STRING TEMPS PLACE DATA IN TEMPS
D3AC	C5FB	ERRG02	X
D3AF	C5FE	PUTNLI	X
D3CE	C61D	GETSPA	BUILDS STRING VECTORS
D3D0	C61F	TRYAG2	X
D3D8	C62D	TRYAG3	X
D3E0	C63A	TRYAG4	X
D3E5	C644	STRFRE	X
D3E8	C65A	GETRTS	X
D3F0	C65B	GARBAG	X
D400	C66A	GARBA2	DOES 'GARBAGE COLLECTION' - PACKS STRINGS
D400	C67E	GLOOP	X
D400	C68A	COL00	X
D400	C693	COL00B	X
D400	C69E	COL00A	X
D400	C6A9	COL01	X
D400	C6B2	COL02	X
D400	C6CE	GLOP1	X
D400	C6D8	COL02B	X
D400	C6F0	COL02A	X
D400	C700	GRBEND	JMP ENDGRB
D400	C703	COL03	MOVES FRESPO TO FRETOP
D400	C716	ENDGRB	MOVES FRESPO TO FRETOP
D400	C71F	SKIP2	X
D400	C724	SKIP2A	X
D400	C726	MOVPT	X
D400	C730	MOV00	X
D400	C735	MOVTOP	X
D400	C73F	MOV01	X
D400	C744	SETINX	X
D400	C746	SET00	X
D517	C74F	CAT	CONCATENATE TWO STRINGS (FAC) AND (+(TXTPTR))
D537	C76F	SIZEOK	X
D554	C78C	MOVINS	X
D562	C79A	MOVSTR	X
D566	C79E	MOVDO	X
D56A	C7A2	MOULP	X
D573	C7AB	MUDDNE	X
D57C	C7B4	MVSTRT	X
D57D	C7B5	FRESTR	X
D580	C7B8	FREFAC	X
D584	C7BC	FRETMP	FREES UP TEMPORARY STRING POINTERS
D580	C7DE	RES00	X
D580	C7F6	FRE01	X
D5AF	C7FC	FREPLA	X
D580	C7FE	FRE02	X
D5B5	C811	FRETMS	X
D5C5	C821	FRETMS	X
D5C6	C822	CHR0	ROUTINE - CHR\$(VALUE) (VALUE 0-255)

Table F-3. Hex Addresses and Label References: CBM BASICs (Continued)

BASIC 3.0	BASIC 4.0	Labels	Description
D5DA	C836	LEFTD	ROUTINE - LEFT\$()
D5E0	C83C	RLEFT	X
D5E6	C842	RLEFT1	X
D5E7	C843	RLEFT2	X
D5E8	C844	RLEFT3	X
D5FF	C85B	PULMOR	X
D606	C862	RIGHTD	ROUTINE - RIGHT\$()
D611	C86D	MIDD	ROUTINE - MID\$()
D622	C87E	MID2	X
D636	C897	PREAM	USED BY RIGHT
D656	C8B2	LEN	ROUTINE - LEN(STRING)
D65C	C8B8	LEN1	X
D665	C8C1	ASC	ROUTINE - ASC(STRING)
D672	C8CE	GOFUC	X
D675	C8D1	GTBYTC	DOES A CHRGET AND GETBYT
D678	C8D4	GETBYT	EVALUATE THE FORMULA AND RETURN A BYTE VALUE (IN .X)
D678	C8D7	CONINT	X
D687	C8E3	VAL	ROUTINE - VAL(STRING)
D6A7	C903	VAL2	X
D6B0	C918	ST2TXT	X
D6C5	C920	VALRTS	X
D6C6	C921	GETNUM	EVALUATE FORMULA AND RETURN INTEGER VALUE (0-65535)
D6CC	C927	COMBYT	X
D6D2	C92D	GETADR	CONVERT FAC TO VALUE(0-65535) PLACE IN POKER
D6E8	C943	PEEK	ROUTINE - PEEK(X)
D6FB	C94E	GETCON	X
D6FE	C951	DOSGFL	X
D707	C95A	POKE	ROUTINE - POKE X
D710	C963	FNWAIT	ROUTINE - WAIT
D71F	C972	STORD0	X
D723	C976	WRITER	X
D726	C97E	ZERRTS	X
D72C	C97F	FADDH	ADD 1/2 TO FPB VALUE IN FAC
D733	C986	FSUB	UNPACKS ARGUMENT AND SUBTRACT FPB
D736	C989	FSUBT	FPB SUBTRACTION ARG-FAC
D76E	C998	FADD5	X
D773	C99D	FADD	UNPACK ARGUMENT INTO ARG DO A FPB ADD
D776	C9A0	FADDT	FPB ADDITION FAC=FAC+ARG
D783	C9AD	FADD2	X
D79F	C9C9	FADDA	X
D7A3	C9CD	FADD1	X
D7AF	C9D9	FADD4	X
D7B8	C9E5	SUBIT	X
D7DE	CA08	FADFLT	X
D7E3	CA0D	NORMAL	NORMALIZE ADDITION AND SUBTRACTION RESULTS
D7E7	CA11	NORM3	X
D803	CA2D	ZEROF0	FAC=0
D805	CA2F	ZEROF1	X
D807	CA31	ZEROML	MAKE SIGN POSITIVE
D80A	CA34	FADD2	X
D829	CA53	NORM2	X
D835	CA5F	NORM1	X
D842	CA6C	SQUEEZ	X
D844	CA6E	RNDSHF	X
D852	CA7C	RNDRTS	X
D853	CA7D	NEGFAC	COMPLEMENT FAC ENTIRELY

Table F-3. Hex Addresses and Label References: CBM BASICs (Continued)

BASIC 3.0	BASIC 4.0	Labels	Description
D859	CA83	NEGFCH	COMPLEMENT JUST THE NUMBER IN FAC
D87B	CAA5	INCFAC	INCREMENT FAC
D889	CAB3	INCFRT	X
D88A	CAB4	OUERR	OVERFLOW ERROR VECTOR
D88F	CAB9	MULSHF	SHIFER ROUTINES
D891	CABB	SHFTR2	X
D8A5	CACF	SHIFTR	X
D8B2	CADC	SHFTR3	X
D8B8	CAE2	SHFTR4	X
D8BC	CAE6	ROLSHF	X
D8C6	CAF0	SHFTRT	X
D8C8	CAF2	FONE	FLOATING-POINT-BINARY CONSTANTS
D8CD	CAF7	LOGCN2	X
D8E2	CB0C	SBR05	X
D8E7	CB11	SBR20	X
D8EC	CB16	NEGHF	X
D8F1	CB18	LOG2	X
D8F6	CB20	LOG	ROUTINE - LOG(X)
D8FD	CB27	LOGERR	ILLEGAL QUANTITY ERROR VECTOR
D900	CB2A	LOG1	X
D900	CB5A	MULLN2	X
D934	CB5E	FMULT	FPB MULTIPLY FAC=FAC*ARG
D937	CB61	FMLTT	FPB MULTIPLY WITH ARG AND .AC LOADED
D945	CB8F	MLTPLY	X
D94A	CB94	MLTPL1	X
D94D	CB97	MLTPL2	X
D989	CB03	MLTPL3	X
D997	CB01	MULTRT	X
D998	CB02	CONUPK	UNPACK MEMORY INTO ARG
D9C3	CBED	MULDIV	CHECK AND ADJUST EXPS OF FPB MULT AND DIV
D9C5	CBEF	MLDEXP	X
D9D0	CBFA	TRYOFF	X
D9E0	CC0A	MLDVEX	X
D9E6	CC10	ZEREMV	X
D9EB	CC15	GOOVER	OVERFLOW ERROR VECTOR
D9EE	CC18	MUL10	MULTIPLY FAC BY 10
D9F9	CC23	FINML6	X
DA04	CC2E	MUL10R	X
DA05	CC2F	TENC	FPB VALUE 10
DA0A	CC34	DIV10	DIVIDE FAC BY 10
DA13	CC3D	FDIVF	X
DA1B	CC45	FDIV	UNPACK MEMORY AND DIVIDE
DA1E	CC48	FDIVT	FAC = ARG/FAC
DA35	CC5F	DIVIDE	X
DA46	CC75	SAVQUO	X
DA58	CC82	QSHFT	X
DA5B	CC85	SHFARG	X
DA69	CC93	DIUSUB	X
DA6A	CCB0	LD100	X
DA8A	CCB4	DIUNRM	X
DA96	CCD0	DV0ERR	OVERFLOW ERROR VECTOR
DA9B	CCD5	MOVFR	MOVE RES TO FAC
DA9E	CCD8	MOVFM	MOVE MEMORY TO FAC
DAD3	CCFD	MOV2F	X
DAD6	CD00	MOV1F	X
DADC	CD06	MOVUF	X

Table F-3. Hex Addresses and Label References: CBM BASICs (Continued)

BASIC 3.0	BASIC 4.0	Labels	Description
DAE0	CD0A	MOVMF	MOVE FAC TO MEMORY
DB06	CD32	MOVFA	MOVE ARG TO FAC
DB0A	CD34	MOVFA1	X
DB0E	CD38	MOVFAL	X
DB16	CD42	MOVAF	MOVE FAC TO ARG
DB1B	CD45	MOVEF	X
DB1D	CD47	MOVAF1	X
DB26	CD50	MOVRTS	X
DB27	CD51	ROUND	ROUND FAC
DB2F	CD59	INCRND	X
DB37	CD61	SIGN	EXTRACT SIGN FROM FAC IN .A
DB3B	CD65	FCSIGN	X
DB3D	CD67	FCONP3	X
DB44	CD6E	SIGNRT	X
DB45	CD6F	SGN	ROUTINE - SGN(X)
DB48	CD72	FLOAT	FLOAT THE SIGNED INTEGER IN FAC
DB50	CD7A	FLOAT5	FLOAT THE SIGNED NUMBER IN FAC
DB55	CD7F	FLOATC	X
DB5B	CD85	FLOATB	X
DB64	CD8E	ABS	ROUTINE - ABS(X)
DB67	CD91	FCONP	COMPARE ARG AND FAC .A=1+R(X)
DB69	CD93	FCONPN	X
DB9E	CD98	FCONPC	X
DBA4	CDCE	FCONPD	X
DBA7	CD01	QINT	FAC=INT(FAC) SIGNED ROUTINE - INT(X)
DBBB	CD05	QISHFT	X
DBC6	CD0F	QINTRT	X
DBC7	CD0F	QINT1	X
DBD8	CE02	INT	ROUTINE - INT(X)
DBF5	CE1F	CLRFAC	.A TO ALL POSITIONS OF FAC
DBFE	CE28	INTRTS	X
DBFF	CE29	FIN	FBP INPUT, TXTPTR POINTS TO ASCII, RETURNS IN FAC
DC03	CE2D	FIN2LP	X
DC12	CE3C	QPLUS	X
DC16	CE40	FINC	X
DC19	CE43	FINDG0	X
DC1B	CE45	FIN1	X
DC3A	CE64	FINEC1	X
DC3C	CE66	FINEC	X
DC3F	CE69	FNEG1	X
DC41	CE6B	FINEC2	X
DC4D	CE77	FINOP	X
DC53	CE7D	FINE	X
DC55	CE7F	FINE1	X
DC5E	CE88	FINDIV	X
DC67	CE91	FINMUL	X
DC6E	CE98	FINONG	X
DC73	CE9D	NEGX05	X
DC76	CEA0	FINDIG	X
DC7D	CEA7	FINDG1	X
DC8A	CEB4	FINLOG	X
DC9D	CEC7	FINEG	X
DCAC	CE06	MLEX10	X
DCBA	CEE4	MLEXMI	X
DCBF	CEE9	N0999	FPB VALUE 99999999.90625
DC4	CEEE	N9999	FPB VALUE 99999999.5

Table F-3. Hex Addresses and Label References: CBM BASICs (Continued)

BASIC 3.0	BASIC 4.0	Labels	Description
DC09	CEFB	RMIL	FPB VALUE 10-9
DC00	CEFB	CKSMC0	CHECKSUM BYTE #0000 ROM
DC0E	CF78	INPRT	PRINT CURRENT LINE NUMBER
DCD9	CF83	LINPRT	PRINT NUMBER IN (.A+HIGH .Y+LOW)
DCE6	CF90	STR0U2	JMP STROUT
DCE9	CF93	FOUT	FPB OUTPUT
DCEB	CF95	FOUTC	X
DCF3	CF90	FOUT1	X
DD0C	CFB6	FOUT37	X
DD15	CFBF	FOUT7	X
DD17	CF01	FOUT4	X
DD22	CF0C	FOUT3	X
DD2D	CFD7	FOUT38	X
DD34	CFDE	FOUT9-	X
DD3B	CFE5	FOUT5	X
DD3E	CFE8	BIGGES	X
DD53	CFD0	FOUTPI	X
DD54	CFFE	FOUT6	X
DD5F	D009	FOUT39	X
DD70	D01A	FOUT18	X
DD72	D01C	FOUT8	X
DD74	D01E	FOUTIM	CLOCK ENTRY INTO FOUT
DD76	D020	FOUT2	X
DD9A	D044	FOUT41	X
DD9C	D046	FOUT40	X
DDA3	D04D	FOUTYP	X
DDBE	D068	STXBUF	X
DD00	D07A	FOULDY	X
DD02	D07C	FOUT11	X
DD0F	D089	FOUT12	X
DD0F	D089	FOUT14	X
DDFB	D0A5	FOUT15	X
DE10	D0BA	FOUT19	X
DE13	D0BD	FOUT17	X
DE18	D0C2	FOUT20	X
DE1D	D0C7	FHALF	FPB VALUE 1/2
DE1F	D0C9	ZERO	X
DE22	D0CC	FOUTBL	TABLES OF POWERS OF -10+X
DE46	D0F0	FDCEND	END OF POWERS TABLE
DE5E	D106	TIMEND	FPB TIME CONVERSION TABLES
DE5E	D106	SQR	ROUTINE - SQR(X)
DE68	D112	FPWRT	ROUTINE (ARG1FAC)
DE71	D11B	FPWRT1	X
DE8B	D135	FPWR1	X
DEA1	D14B	NEGOP	NEGATE THE NUMBER IN FAC
DEAB	D155	NEGRTS	X
DEAC	D156	LOGEB2	FPB VALUE LOG(E) BASE 2
DEB1	D15B	EXPON	LOG AND EXPONENT FPB TABLES
DEDA	D184	EXP	ROUTINE - EXP(FAC)
DEEA	D194	STOLD	X
DEF5	D19F	SOMLDV	X
DEF8	D1A2	EXP1	X
DF06	D1B2	SNAPLP	X
DF20	D1D7	POLYX	POLYNOMIAL EVALUATOR
DF43	D1ED	POLY	POLYNOMIAL EVALUATOR
DF47	D1F1	POLY1	X

Table F-3. Hex Addresses and Label References: CBM BASICs (Continued)

BASIC 3.0	BASIC 4.0	Labels	Description
DF56	D200	POLY3	X
DF5A	D204	POLY2	X
DF67	D211	POLY4	X
DF77	D221	RMULC	X
DF7B	D225	RADDC	X
DF7F	D229	RND	ROUTINE - RND(X)
DF9D	D247	RSETNR	X
DFB2	D25C	RND1	X
DFC2	D26C	STRNEX	X
DFD5	D27F	GHQUMF	X
DFD8	D282	COS	ROUTINE - COS(X)
DFDF	D289	SIN	ROUTINE - SIN(FAC)
E011	D2BB	SIN1	X
E014	D2BE	SIN2	X
E021	D2CB	SIN3	X
E028	D2D2	TAN	ROUTINE - TAN(FAC)
E050	D2FA	COSC	X
E054	D2FE	PI2	FPB VALUE PI/2
E059	D303	THOPI	FPB VALUE 2*PI
E05E	D308	FR4	FPB VALUE 1/4
E063	D30D	SINCON	SIN TABLES FPB VALUES
E06C	D32C	ATN	ROUTINE - ATN(FAC)
E094	D334	ATN1	X
E0A2	D342	ATN2	X
E0B5	D355	ATN3	X
E0BB	D35B	ATN4	X
E0BC	D35C	ATNCON	X
E0F9	D399	INITAT	BASIC SYSTEM INITIALIZATION CODE
E0FF	D39F	CHDGT	X
E110	D3B0	CHDRTS	X
0000	D3B6	INIT	BASIC SYSTEM INITIALIZATION ROUTINE
E131	D3C9	MOVCHG	X
E150	D400	LOOPM	X
E165	D408	LOOPM1	X
E174	D417	USEDEC	X
E178	D41B	USEDEF	X
E1B7	D44B	WORDS	MESSAGE - 'BYTES FREE'
E1C4	D458	FREMES	MESSAGE - '### COMMODORE BASIC ###'
E1DE	D472	LASTWR	LAST BYTE OF BASIC SYSTEM CODE+1
0000	DEA4	PATCH2	PATCHES
E844	E844	CHTIM	X
0000	FF93	CONCAT	VECTOR - CONCAT
0000	FF96	DOPEN	VECTOR - DOPEN
0000	FF99	DCLDSE	VECTOR - DCLDSE
0000	FF9C	RECORD	VECTOR - RECORD
0000	FF9F	FORMAT	VECTOR - FORMAT
0000	FFA2	COLLECT	VECTOR - COLLECT
0000	FFA5	BACKUP	VECTOR - BACKUP
0000	FFA8	DCOPY	VECTOR - COPY
0000	FFAB	APPEND	VECTOR - APPEND
0000	FFAE	DSAVE	VECTOR - DSAVE
0000	FFB1	DLOAD	VECTOR - DLOAD
0000	FFB4	DIRCAT	VECTOR - DIRECTORY
0000	FFB4	DCAT	VECTOR - CATALOG
0000	FFB7	RENAME	VECTOR - RENAME
0000	FFBA	SCRATC	VECTOR - SCRATCH

Table F-3. Hex Addresses and Label References: CBM BASICs (Continued)

BASIC 3.0	BASIC 4.0	Labels	Description
0000	FFB0	READDS	VECTOR - DS AND DS#
FFC0	FFC0	DOPEN	VECTOR - DOPEN
FFC3	FFC3	DCLDSE	VECTOR - DCLDSE
FFC6	FFC6	COIN	VECTOR - SET INPUT DEVICE
FFC9	FFC9	COOUT	VECTOR - SET OUTPUT DEVICE
FFCC	FFCC	CLSCHN	VECTOR - RESTORE NORMAL I/O DEVICES
FFCC	FFCC	COCHN	SAME AS ABOVE
D481	FFCF	INCHR	VECTOR - INPUT A CHARACTER (FROM SCREEN)
FFCF	FFCF	CINCH	SAME AS ABOVE
FFD2	FFD2	OUTCH	VECTOR - OUTPUT A CHARACTER
FFD5	FFD5	DLOAD	VECTOR - LOAD
FFD8	FFD8	DSAVE	VECTOR - SAVE
FFDB	FFDB	DVERF	VECTOR - VERIFY
FFDE	FFDE	DSYS	VECTOR - SYS
FFE1	FFE1	ISCHTC	VECTOR - TEST STOP KEY
FFE4	FFE4	CGETL	VECTOR - GET CHARACTER FROM KEYBOARD BUFFER
FFE7	FFE7	CCALL	VECTOR - ABORT ALL I/O CHANNELS
000F	0000	CONTR	Z
0000	0000	CHTWFL	Z
000F	0000	LINWID	Z
0010	0000	NCMWID	Z
006C	0000	STRNGI	Z
007F	0000	@	Z
C494	0000	INCRTS	Z
C721	0000	SNERRX	Z
D404	0000	FNDVAR	Z
D41E	0000	TVAR	Z
D427	0000	SVARS	Z
D433	0000	SUAR	Z
D43B	0000	SVARGO	Z
D440	0000	ARYVAR	Z
D48A	0000	ARYSTR	Z
D497	0000	DVARS	Z
D4A1	0000	DVAR	Z
D4B6	0000	DVAR2	Z
D4C0	0000	DVAR3	Z
D4DB	0000	GRBRTS	Z
D4E0	0000	GRBPA5	Z
D5B0	0000	FRETRT	Z
D745	0000	STORD1	Z
D745	0000	STORD1	Z
D745	0000	STORD1	Z
D745	0000	STORD1	Z