Apple //c Quick Reference

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Slot Allocation:

Slot	Function	Slot	Function
0	Language card	1	Printer serial port
2	Modem serial port	3	80 column card
4	Mouse (//c)	5	"Easter Egg" in early ROMs
6	Internal and external floppy drives	7	Mouse (//c Plus)

Memory Map:

$0000 - $BFFF	RAM
$0000 - $00FF	Zero Page
$0100 - $01FF	Stack
$0400 - $07FF	Text Video Page 1
$0800 - $0BFF	Text Video Page 2
$2000 - $3FFF	High Resolution Graphics Page 1
$4000 - $5FFF	High Resolution Graphics Page 2
$C000 - $CFFF	I/O
$C000 - $C0FF	Soft Switches and Status Locations
$C100 - $C7FF	Peripheral Card Memory
$C800 - $CFFF	Extended Memory for Peripheral Card in Use
$D000 - $FFFF	ROM/Bank-Switched RAM
$D000 - $DFFF	Bank-Switched RAM (2 Banks RAM, 1 Bank ROM)
$E000 - $FFFF	Bank-Switched RAM (1 Bank RAM, 1 Bank ROM)

Common Addresses:

Hex	Decimal	Function
$0020	32	Left margin of text window
$0021	33	Text window width
$0022	34	Top margin of text window
$0023	35	Right margin of text window
$0024	36	Cursor column
$0025	37	Cursor row
$C000	-16384	Read to get keyboard character (>127 means key pressed)
$C00E	-16370	Read to set primary character set
$C00F	-16369	Read to set secondary character set
$C010	-16368	Write to clear keyboard strobe
$C019	-16359	Read for blanking interval status (<128 active, >127 inactive)
$C01A	-16358	Read for mode (<128 graphics, >127 text)

Hex	Decimal	Function
$C01B	-16357	Read for text window (<128 absent, >127 present)
$C01C	-16356	Read for screen page (<128 page 1, >127 page 2)
$C01D	-16355	Read for graphics mode (<128 low-res, >127 hi-res)
$C01E	-16354	Read for character set status (<128 primary, >127 alternate)
$C020	-16352	Read to toggle cassette output (not on Apple //c)
$C030	-16336	Read to toggle speaker
$C050	-16304	Read to set graphics mode
$C051	-16303	Read to set text mode
$C052	-16302	Read to set full screen graphics
$C053	-16301	Read to set graphics plus text
$C054	-16300	Read to set graphics page 1
$C055	-16299	Read to set graphics page 2
$C056	-16298	Read to set low resolution graphics
$C057	-16297	Read to set high resolution graphics
$C058	-16296	Read to set annunciator 0 off
$C059	-16295	Read to set annunciator 0 on
$C05A	-16294	Read to set annunciator 1 off
$C05B	-16293	Read to set annunciator 1 on
$C05C	-16292	Read to set annunciator 2 off
$C05D	-16291	Read to set annunciator 2 on
$C05E	-16290	Read to set annunciator 3 off
$C05F	-16289	Read to set annunciator 3 on
$C062	-16287	Read for pushbutton 0 status (<127 not pressed, >127 pressed)
$C063	-16286	Read for pushbutton 0 status (<127 not pressed, >127 pressed)
$C064	-16285	Read for pushbutton 2 status (<127 not pressed, >127 pressed)
$C070	-16272	Read/write to trigger game control connector strobe output once/twice
$FBBF	-1089	Apple //c ROM version
$F666	-2458	Enter Mini-Assembler (ROM version 0 and later)
$FF69	-151	Enter monitor

Common Keyboard Commands:

Key	Function
<Control>-<Reset>	Halt current program
<Control>-<Open Apple>-<Reset>	Halt and reboot
<Control>-<Solid Apple>-<Reset>	Run diagnostics (later ROMs)
<Esc><Control>-Q	Leave 80-column mode
<Control>-X	Cancel line

Key	Function
<Esc>E	Delete to end of line
<Esc>F	Delete to end of screen
<Esc>@	Clear screen

BASIC Keywords: (I=Integer BASIC only, A=Applesoft only, D=DOS, P=ProDOS)

_P	?A	APPENDD,P	AUTOI	BLOADD,P	BRUND,P	BSAVED,P
CALL	CATP	CATALOGD,P	CHAIND,P	CLEARA	CLOSED,P	CLRI
COLOR	CONI	CONTA	CREATEP	DATA	DEFFNA	DEL
DELETED,P	DIM	DRAWA	DSPI	END	EXECD,P	FLASHA
FLUSHP	FOR	FPI,D	FREP	GETA	GOSUB	GOTO
GR	HCOLORA	HGRA	HGR2A	HLIN	HMEM:	HOMEA
HPLOTA	HTABA	IF-THEN	IN#	INITD	INPUT	INVERSEA
LET	LIST	LOADD,P	LOCKD,P	LOMEM:	MANI	MAXFILESD
MOND	NEW	NEXT	NODSPI	NOTRACE	NOMOND	NORMALA
ONA	ONERRA	OPEND,P	PDL	PEEK	PLOT	POKE
POPA	POSITIOND,P	PR#	PREFIXP	PRINT	READD,P	RECALLA
REM	RENAMED,P	RESTOREP	RESUMEA	RETURN	RTA	RUND,P
SAVED,P	SCALEA	SHLOADA	SPEEDA	STOPA	STOREP	TABI
TEXT	TRACE	UNLOCKD,P	USR	VERIFYD	VLIN	VTAB
WAITA	WRITED,P	XDRAWA				

BASIC Functions:

ABS	ASC	ATNA	CHR$A	COSA	EXPA	FNA
FREA	INTA	LEFT$A	LEN	LOGA	MID$A	PDL
PEEK	POSA	RIGHT$A	RND	SCRN	SGN	SINA
SPCA	SQRA	STR$A	TABA	USRA	VALA	

Monitor Commands:

<Control>-C	Return (e.g. to BASIC)
<*slot*><Control>-P	Send output to/activate device in <*slot*>
<*a*>	Display contents of address <*a*>
<Return>	Display contents of next 8 bytes of memory
<*a*>.<*b*>	Display range of memory from <*a*> to <*b*>
<Control>-E	Examine registers
<*a*>:<*b*>...	Modify memory locations starting at address <*a*>
<*start*>.<*end*>W	Write memory to tape (not on Apple //c)
<*start*>.<*end*>R	Read memory from tape (not on Apple //c)

<*dest*><<*start*><*end*>M	Move (copy) memory
<*dest*><<*start*><*end*>V	Verify memory
<*a*>G	Go to address <*a*>
<*a*>L	Disassemble code from address <*a*>
I	Set inverse video
N	Set normal video
<*n1*>+<*n2*>	Add hex numbers
<*n1*>-<*n2*>	Subtract hex numbers
<Control>-Y	Jump to user-defined routine at $03F8
3D0G	Go to BASIC without disconnecting DOS/Prodos

Mini-Assembler Commands:

$<*monitor command*>	Run monitor command
<*mnem*> <*operands...*>	Assemble instruction at current address
<*addr*>:<*mnem*> <*operands...*>	Assemble instruction at specific address

Common 80 Column Card Control Characters:

7	Beep speaker	8	Cursor left
10	Cursor down	11	Clear screen from cursor
12	Clear screen	14	Set normal video
15	Set inverse video	17	Set active-40 mode
18	Set active-80 mode	21	Leave 80 column mode
22	Scroll down	23	Scroll up
24	Deactivate Mousetext	25	Cursor home
26	Clear line	27	Activate Mousetext
28	Cursor right	29	Clear to end of line

Prompts:

>	Integer BASIC	]	Applesoft	*	Monitor	!	Mini-Assembler

Lo-Res Graphics Colors:

0	Black	1	Magenta	2	Dark Blue	3	Purple
4	Dark Green	5	Grey 1	6	Medium Blue	7	Light Blue
8	Brown	9	Orange	10	Grey 2	11	Pink
12	Light Green	13	Yellow	14	Aqua	15	White

Hi-Res Graphics Colors:

0	Black	1	Green	2	Purple	3	White
4	Black	5	Orange	6	Blue	7	White