

Appendix 3. Memory Map

This is Appendix 3 of the [SD-8516 Programmer's Reference Guide](#).

Memory Map

BANK 0 - User RAM & System Variables (\$00,0000-\$00,FFFF)

Address Range	Size	Name / Area	Description / Notes
\$000000-\$00FFFF	61,184 B	User RAM	General purpose free RAM
\$000100-\$00FF00	~64 KB	BASIC Program Area	Main BASIC program storage (see int0x05h.sda)

Total free in Bank 0: ~65,280 bytes

BANK 1 - KERNAL ROM & HARDWARE (\$010000-\$01FFFF)

Address Range	Size	Name / Symbol	Description / Notes
\$010000-\$0100FF	256 bytes	Kernal Variables	Reserved for Kernal Variables (ex. <i>HEXMON</i> uses <i>MON_ADDR</i> =\$0100D0, <i>MON_ADDR2</i> = \$0100D3 and <i>MON_MODE</i> =\$0100D6).
\$010100-\$013FFF	~16 KB	Kernal Code	Main KERNAL routines + limited expansion space
\$014000-\$01DBFF	40,960 bytes	RESERVED	Reserved for future KERNAL expansion
\$01DB00-\$01DBFF	256 bytes	PATB_TBUF	ROM BASIC tokenizer scratch space (currently underused?)
\$01DC00-\$01DFFF	1,024 bytes	Stack Space	Hardware stack (grows down from \$01DFFF; overflow if SP < \$01DC00)
\$01E000-\$01E7FF	2,048 bytes	VM1_CHAR_ROM	PETSCII font data (copied from character ROM at initialization)
\$01E800-\$01E8FF	256 bytes	Kernal Workspace	Reserved for KERNAL internal use
\$01E900-\$01EBFF	768 bytes	INT_VECTOR_TABLE	Interrupt vector table (256 vectors × 3 bytes = 24-bit addresses, little-endian)
\$01EC00-\$01ECFF	256 bytes	SCRATCH_BUFFER	General-purpose scratch space (used by INPUT, expression eval, parsing, etc.)
\$01ED00-\$01EDFF	256 bytes	INPUT_BUFFER	Input line buffer (also used as part of PATB system variables)
\$01EE00-\$01EEFF	256 bytes	PATB_VARIABLES + stacks etc.	PATB_BASIC variables, expression stack, GOSUB/FOR stacks, program pointers
\$01EF00-\$01EF0B	12 bytes	Video System Registers	VIDEO_MODE, VIDEO_COLUMNS, VIDEO_ROWS, VIDEO_CHAR_WIDTH/HEIGHT, VIDEO_CLOCK
\$01EF0C-\$01EF0F	4 bytes	Cursor System	CURSOR_BLINK, CURSOR_STATE, CURSOR_X, CURSOR_Y
\$01EF10-\$01EF31	34 bytes	Keyboard System	KBD_STATUS_FLAGS, KEYBOARD_COUNT, KEYBOARD_BUFFER (32 bytes)

Address Range	Size	Name / Symbol	Description / Notes
\$01EF32-\$01EF3A	9 bytes	Input/Syscall System	INPUT_MODE, INPUT_LENGTH, SYSCALL_STATUS/ADDR, KBPC (BASIC program counter)
\$01EF3B-\$01EF42	8 bytes	FREE	Reserved for future use
\$01EF43-\$01EF49	7 bytes	Extended Video System	VIDEO_COLOR_MODE, VIDEO_TEXT_BASE, VIDEO_COLOR_BASE
\$01EF4A-\$01EF7F	54 bytes	FREE	Reserved for hardware expansion
\$01EF80-\$01EFBF	64 bytes	Sound System (4 voices)	see: SD-450 Sound System
\$01EFC0-\$01EFFF	64 bytes	FREE	Reserved for sound system expansion
\$01F000-\$01F3E7	1,000 bytes	VM1_TEXT_BASE	Video Mode 1 - 40x25 text character map
\$01F3E8-\$01F7FF	1,048 bytes	FREE (text area)	
\$01F800-\$01FBE7	1,000 bytes	VM1_COLOR_BASE	Video Mode 1 - 40x25 color attribute map
\$01FBE8-\$01FFFF	1,048 bytes	FREE (color area)	

BANK 2 -- USER/VIDEO RAM (\$020000-\$02FFFF)

Address Range	Size	Name / Area	Description
\$020000-\$02FFFF	65,536 B	User RAM	Mode 1: Free
\$020000-\$02FFFF	65,536 B	User RAM	Mode 2: Free
\$020000-\$02FFFF	65,536 B	User RAM	Mode 3+: Reserved

BANK 3 -- USER RAM (\$030000-\$03FFFF)

Address Range	Size	Name / Area	Description
\$030000-\$03FFFF	65,536 B	User RAM	free

Quick Free Space Summary

Bank	Free Bytes	Notes
0	65,280	Mostly user RAM + small BASIC area
1	~40,960	Reserved for future KERNAL expansion
2	65,536	Mode 1 and 2: Free / Graphics Mode 3 and up: Reserved
3	65,536	Completely free
Total	237,312	Available for user programs & data

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