SELECTION	LOGIC FUNCTION	ARITHMETIC (NO CARRY)	ARITHMETIC (W/ CARRY)
0000	NOT	—	INC
0001	NOR	—	—
0100	NAND	—	—
0110	XOR	SBB	SUB
1001	XNOR	ADD	ADC
1011	AND	—	—
1100	—	SHL	—
1101	—	—	—
1110	OR	—	—
1111	—	DEC	—

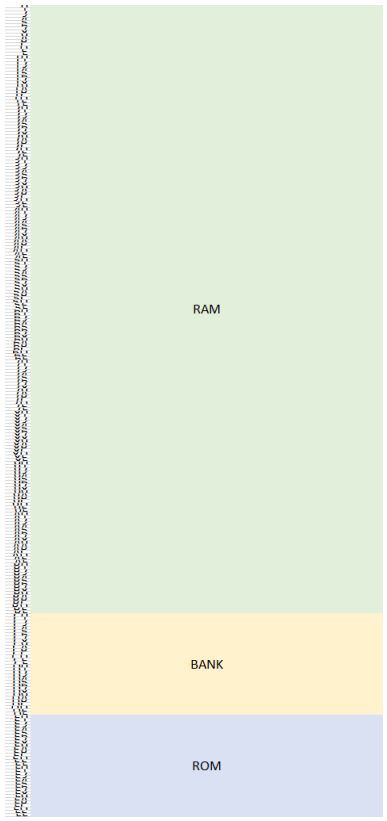
TABLE 2

SELECTION				ACTIVE-HIGH DATA		
				M = H	M = L; ARITHMETIC OPERATIONS	
S3	S2	S1	S0	LOGIC FUNCTIONS	$\overline{C_n}$ = H (no carry)	$\overline{C_n}$ = L (with carry)
L	L	L	L	F = $\overline{A}$	F = A	F = A PLUS 1
L	L	L	H	F = $\overline{A+B}$	F = A + B	F = (A + B) PLUS 1
L	L	H	L	F = $\overline{AB}$	F = A + $\overline{B}$	F = (A + $\overline{B}$) PLUS 1
L	L	H	H	F = 0	F = MINUS 1 (2's COMPL)	F = ZERO
L	H	L	L	F = $\overline{AB}$	F = A PLUS $A\overline{B}$	F = A PLUS $A\overline{B}$ PLUS 1
L	H	L	H	F = B	F = (A + B) PLUS $A\overline{B}$	F = (A + B) PLUS $A\overline{B}$ PLUS 1
L	H	H	L	F = A ⊕ B	F = A MINUS B MINUS 1	F = A MINUS B
L	H	H	H	F = $A\overline{B}$	F = $A\overline{B}$ MINUS 1	F = $A\overline{B}$
H	L	L	L	F = $\overline{A}$ + B	F = A PLUS AB	F = A PLUS AB PLUS 1
H	L	L	H	F = $\overline{A \oplus B}$	F = A PLUS B	F = A PLUS B PLUS 1
H	L	H	L	F = B	F = (A + $\overline{B}$) PLUS AB	F = (A + $\overline{B}$) PLUS AB PLUS 1
H	L	H	H	F = AB	F = AB MINUS 1	F = AB
H	H	L	L	F = 1	F = A PLUS A†	F = A PLUS A PLUS 1
H	H	L	H	F = A + B	F = (A + B) PLUS A	F = (A + B) PLUS A PLUS 1
H	H	H	L	F = A + $\overline{B}$	F = (A + $\overline{B}$) PLUS A	F = (A + $\overline{B}$) PLUS A PLUS 1
H	H	H	H	F = A	F = A MINUS 1	F = A

† Each bit is shifted to the next more significant position.

Families	Voltage	Combination Logic	Counters	Digital Comp/ Parity Gen.	Gates	Transceivers	Level Translators	Phase Lock Loops	Bus-Hold	Series Damping Resistors	Schmitt Triggers	Overvoltage-tolerant Inputs	Bipolar	CMOS
~~AHCT~~	5				✔[1]	✔	✔				✔	✔[1]		✔[1]
ACT	5	✔	✔	✔	✔	✔	✔	✔	✔			✔		✔
~~FCT~~	5		✔	✔		✔			✔					✔
HCT	5		✔	✔	✔	✔	✔	✔						✔[1]
ALS	5		✔	✔	✔	✔							✔	
LS	5	✔	✔	✔	✔	✔		✔					✔	
S	5	✔	✔	✔	✔			✔			✔		✔	
~~TTL~~	5	✔			✔						✔		✔	

Try to use only LS and ACT series



Area	Contents	Capacity		Pages	Block	Notes
RAM	Zero Page	48 KB	256 B	00	0000 – 00FF	Used for **variable and immediate data** storage. Can be accessed by shortened instructions.
	Program		Almost 48 KB	01 – BF	0100 – BFFF	Free memory for **user program code**.
	Heap					Free memory for **global and dynamic data**. Usually starts immediately after program code ends.
	Stack					**Processor stack**. Grows downwards. Size defined by loaded program header or top of heap. Hardware overflow detection.
	Banked	8 KB		C0 – DF	C000 – DFFF	Several switchable 8 KB **memory banks**. Sound/video data could be placed here too.
ROM	System	8 KB	Almost 8 KB	E0 – FE	E000 – FEFF	**Loaders** (Floppy/Cassette), **Built-in Languages** (e.g. BASIC), **BIOS**, **Monitor** (Machine Code), **Operating System** (Kernel & API), **Command Processor**, **Device Drivers**.
	Interrupts		256 B	FF	FF00 – FFFF	16 **IRQ Hardware Interrupts**. 110 **INT Software Interrupts**. One **Non-Maskable Interrupt** vector. One **Reset** vector.
I/O	Non-Volatile	256 B	64 B	Ports	0000 – 003F	**Non-volatile memory** for storing BIOS settings. Backed up by battery.
	Chipset		64 B		0040 – 007F	**Chipset Devices** on Motherboard (RTC, DMA & Interrupt Controllers, GPIO pins, etc...)
	Expansion		128 B		0080 – 00FF	**Expansion Slots** No. 1 to 8. Each slot has 32 port-mapped 8-bit registers.