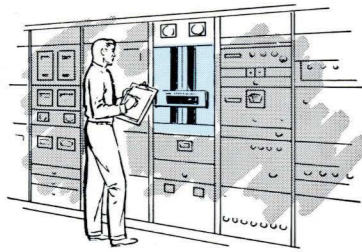


**pb 250**

**pb Packard Bell Computer**

# the pb 250 / a general purpose, microsecond computer for \$30,000



The design of the PB 250 enables it to be mounted as a systems component in 3 1/2 in. of a standard relay rack.

## SPECIFICATIONS

<b>TYPE</b>	Serial, binary, internal program
<b>COMMAND STRUCTURE</b>	Single address with index register
<b>NUMBER OF COMMANDS</b>	46
<b>OPERATION TIMES</b>	
Add/subtract	12 microseconds
Multiply	276 microseconds (max.)
Divide	252 microseconds (max.)
Square root	252 microseconds (max.)
Average access time	1,540 microseconds
Average access time to fast memory	96 microseconds
Maximum operational rate	40,000 instructions per second
<b>WORD LENGTH</b>	21 bits plus sign
<b>MEMORY</b>	
Type:	Magnetostrictive delay lines
Capacity:	1,808 words (Up to 15,888 words internal storage at additional cost. 16,384 words external core memory also available.)
<b>INPUT-OUTPUT</b>	
Standard:	Automatic alphanumeric typewriter Paper tape punch and reader 32 control outputs 30 control inputs High-speed block input-output (85 KC word rate)
Optional:	High-speed paper tape punch and reader Magnetic tape units (six maximum) employing IBM 700 series format Punched card equipment Analog-to-digital converters Digital-to-analog converters
<b>PHYSICAL DESCRIPTION</b>	30 in. high, 19 in. wide, 24 in. deep 110 pounds Fully solid-state construction Completely modularized
<b>POWER REQUIREMENT</b>	115 volts, 60 cycles, at 100 watts

## Completely Solid State Internally-Stored Program

From Packard Bell Computer comes the first truly "second-generation" medium-scale computer. The PB 250 is a general purpose digital computer that may be applied to an extremely broad range of scientific, industrial, and military problems. The PB 250 combines a large, expandable memory and a versatile command structure with a computing speed in the microsecond range.

## A FEW OUTSTANDING FEATURES OF THE PB 250

### MICROSECOND SPEED

Computing speeds of the PB 250 rival those found only in expensive, large-scale systems. Addition and subtraction require 12 microseconds. Multiplication and division are variable length commands requiring 276 and 252 microseconds, maximum, respectively. All floating point operations require less than three milliseconds.

### EXPANDABLE MEMORY

Minimum memory capacity of the PB 250 is 1,808 words, including one 16-word fast access line. The memory is economically expandable to 15,888 words internally, plus 16,384 words of external core storage.

### VERSATILE COMMAND STRUCTURE

The extensive command list of 46 instructions contains 14 data transfer commands, 8 arithmetic commands (including divide and square root), 14 logical and program transfer commands, and 10 input-output commands.

### SIMPLE PROGRAMMING

Programming simplicity is achieved by single-address instructions, command indexing, and automatic double precision operations. Symbolic programming routines are supplied at no extra cost with the PB 250.

### FLEXIBLE INPUT-OUTPUT SYSTEM

The PB 250 is adaptable to a wider range of peripheral equipment than any computer in the low-priced field. This equipment includes high-speed tape readers and punches, magnetic tape units, card readers and punches, printers, analog-to-digital and digital-to-analog converters. Standard equipment includes an automatic typewriter, paper tape reader, and punch.

### EXCEPTIONAL RELIABILITY

Maximum reliability is achieved through conservative solid-state design, a small component count (less than 350 transistors), and absence of moving parts.

All memory operations are parity checked.

### SYSTEMS INTEGRATION

Flexible input-output design enables the PB 250 to be easily integrated into existing systems, either on- or off-line.

*The PB 250 may operate as a universal format-to-format converter.*



Logical design by Robert Mark Beck

**pb Packard Bell Computer**

A Subsidiary of Packard Bell Electronics

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## pb 250 command list

### COMMAND STRUCTURE:

Operation 6 bits	Address 13 bits	Index Register 1 bit	Sequence Tag 1 bit
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### ARITHMETIC REGISTERS:

AB (2 word)  
C (1 word)

OPERATIONS	MNEMONIC CODE	NUMERIC CODE	DESCRIPTION
Arithmetic	ADD	14	Add
	SUB	15	Subtract
	DPA	16	Double Precision Addition
	DPS	17	Double Precision Subtraction
	VLS	30	Variable Length Square Root
	VLD	31	Variable Length Divide
	VLM	32	Variable Length Multiply
	CLA	45	Clear A
	CLB	43	Clear B
	CLC	44	Clear C
	GTB	54	Gray to Binary
	Transfer	TAN	35
TBN		36	Transfer if B negative
TCN		34	Transfer if C negative
TUS		74	Transfer on Unequal Signs of A and C
TRU		37	Transfer Unconditionally
TOF		75	Transfer on Overflow of A
TES		77	Transfer on External Signal (one of 30)
Loading and Storing	LDA	05	Load A
	LDB	06	Load B
	LDC	04	Load C
	LDP	07	Load Double Precision
	IAC	01	Interchange A and C
	IBC	02	Interchange B and C
	STA	11	Store A
	STB	12	Store B
	STC	10	Store C
	STD	13	Store Double Precision
	MCL	71	Move Command Line Block
	MLX	26	Move Block from Line X to Line 7
Logical and Shifting	EBP	41	Extend Sign Bit
	AMC	42	AND M and C
	AOC	46	AND OR Combined
	EXF	47	$\bar{M}$ and B
	NAD	20	Normalize AB and Decrement C
	LSD	21	Left Shift AB and Decrement C
	RSI	22	Right Shift AB and Increment C
	SAI	23	Scale Right AB and Increment C
Input-Output	DIU	50	Disconnect Input Unit
	RTK	51	Read Typewriter Keyboard
	RPT	52	Read Paper Tape
	RIU	53	Read Fast Input Unit
	LAI	55	Load A from Input Buffer
	CIB	57	Clear Input Buffer
	WOC	6X	Write Output Character
	PTU	70	Pulse to Specified Unit
	BSO	72	Block Serial Output (high speed)
	BSI	73	Block Serial Input (high speed)