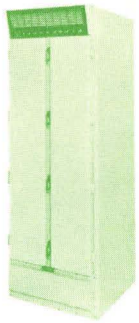
UNIVAC® 1218

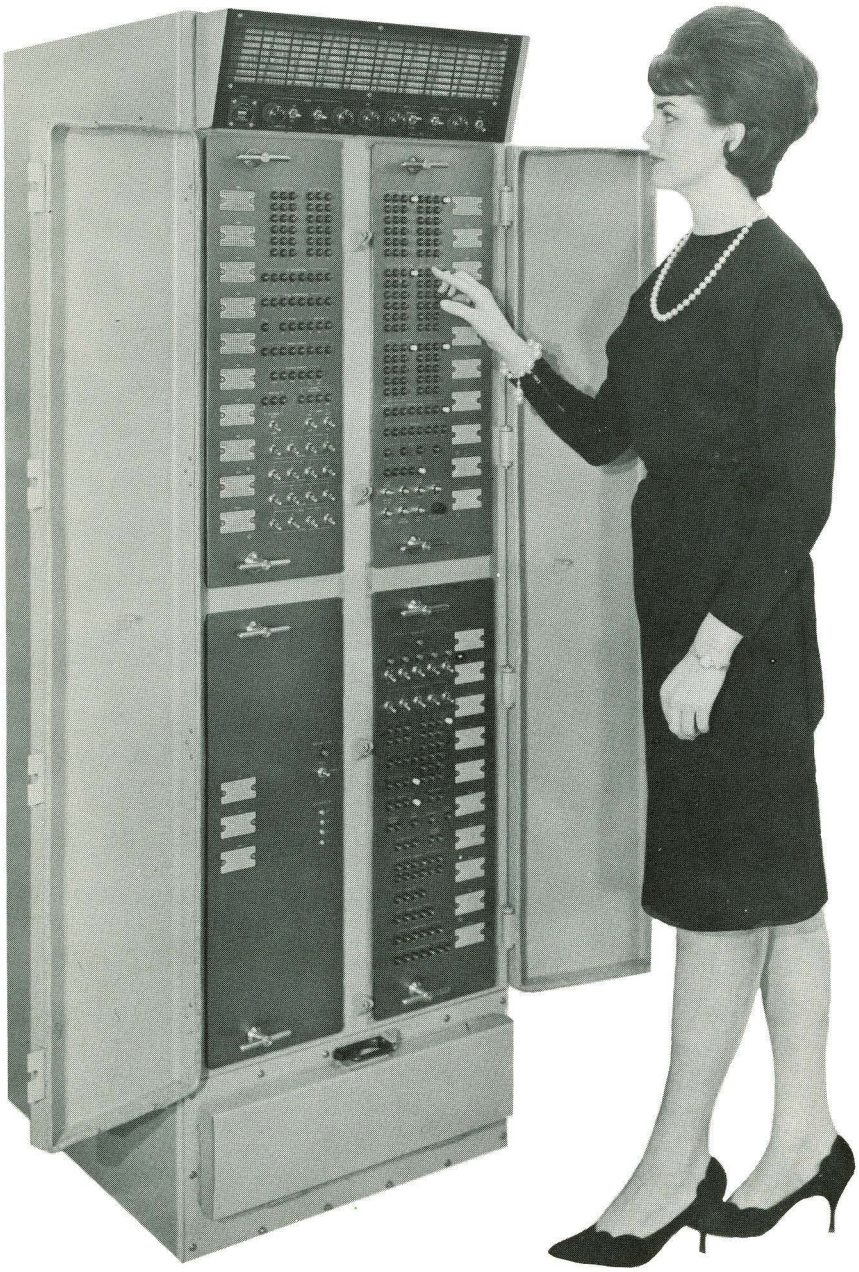
MILITARY COMPUTER



GENERAL DESCRIPTION

UNIVAC 1218 MILITARY COMPUTER

The UNIVAC 1218 Military Computer is ideal for such challenging military applications as the following:



- **Range Instrumentation**
- **Missile Guidance**
- **Missile Fire Control**
- **Simulation**
- **Logistics**
- **Message Switching**
- **Tactical Control**
- **Telemetry**
- **Digital Communications**
- **Data Reduction and Analysis**
- **Inventory and Scheduling**
- **Ground Support Checkout**
- **Navigation**

PHYSICAL SIZE AND WEIGHT

Height: 72 inches
Width: 22¾ inches
Depth: 24½ inches
Weight: 775 pounds

GENERAL INFORMATION

The UNIVAC 1218 Military Computer is a versatile, stored program, medium scale, general purpose, digital computer specifically designed to provide high reliability under adverse operational environments.

In satisfying real-time computational requirements, the equipment availability is of vital concern. To further this end, reliability and maintainability have been made major design goals for the UNIVAC 1218 Computer. Based on past experience with the Naval Tactical Data System and other military programs, design evaluations, and laboratory tests, the calculated MTBF is in excess of 1000 hours. Maintainability is enhanced by the mechanical design which requires only front access to repair or replace printed circuit modules. Other equally important features include the front panel display of all registers, manual alteration of all registers, and switches for operation stepping, sequence stepping, or phase stepping, at a manually controlled variable clock speed. Test points from important circuit areas are available at thirty-four 104-pin test blocks on the front panels. Because the computer uses low-voltage, solid-state components of proven life and reliability, it is compact and dependable. Only minimum site preparation and maintenance are required.

With its high internal operating speed, core memory cycle time of four microseconds, and eight flexible input/output channels, the UNIVAC 1218 Computer is capable of processing large quantities of data in a real-time application. Arithmetic and input/-output operations can be performed on the basis of a single length 18-bit word or a double length 36-bit word, if required for greater precision or for compatibility with other computers. The repertoire of 98 instructions allows complete programming freedom in mathematical and logical computations, as well as full control of the buffered input/output and of real-time, on-line operations. The conventional single address instructions, programmed by simple mnemonics, (i.e. abbreviated English in symbolic terms) simplifies programming and does not require absolute coding. The computer features parallel transfers, one's-complement binary arithmetic, direct addressing, and program controlled automatic address or operand modification via eight memory-contained index registers.

The UNIVAC 1218 Computer can be used with a large variety of local or remote peripheral devices as an independent complete general purpose system, or it can operate as a satellite pre-processor with larger systems to supply off-line, or associated on-line operations.

UNIVAC support of 1218 Computer systems includes assistance in any of the following areas:

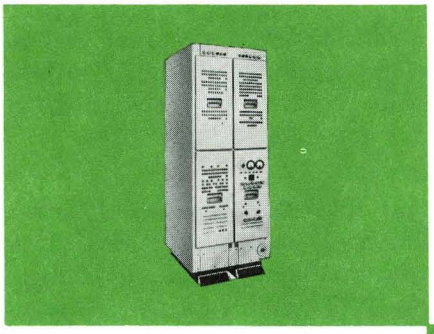
System Analysis – Total capability of a highly competent staff is available to users for problem analysis, equipment specification, mathematical modeling, or operational support for any application.

Programming – In addition to the software package supplied with the computer (i.e., a mnemonic assembler, polycode assembler, floating point package, function evaluation sub-routines, and program debugging aids, etc.) experienced, skilled programmers are available to assist customers to obtain maximum performance from the UNIVAC 1218 Computer.

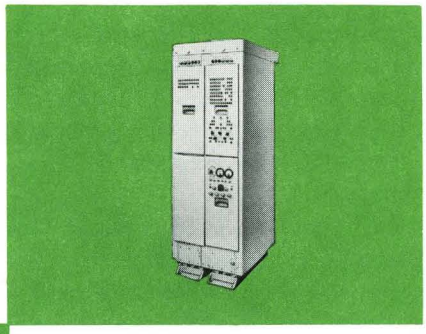
Maintenance – The UNIVAC Military Field Engineering department, comprising fully-trained field engineers and a complete support organization, provides spare parts and service throughout the world. This support begins with site planning and preparation and continues throughout installation, checkout, and normal operation, as required.

Training – A staff of well-trained instructors is available for conducting training courses for customer personnel. Classes covering programming, operation, and maintenance of all equipment can be provided at UNIVAC or at the customer's facility.

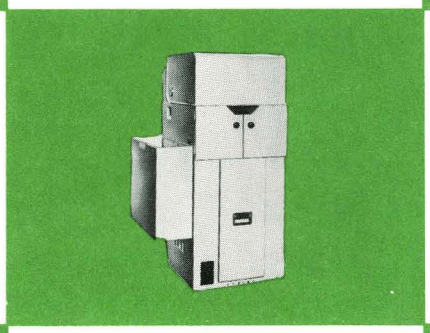
PERIPHERAL DEVICES



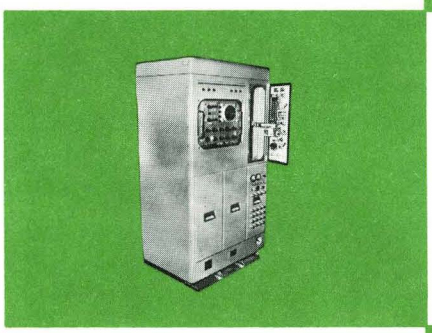
TELECOMMUNICATIONS TERMINAL



KEYSET CENTRAL



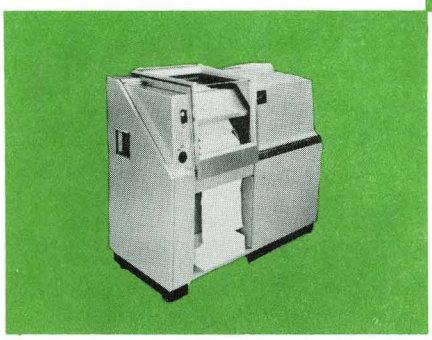
PAPER TAPE EQUIPMENT



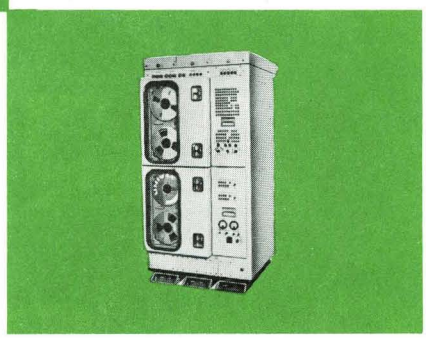
VIDEO PROCESSOR

UNIVERSAL KEYSET

TELETYPEWRITER SET



LINE PRINTER



MAGNETIC TAPE SYSTEM

REPERTOIRE OF INSTRUCTIONS

Code	Symbol	Description	Time μs
02	CL	Compare Y	8
03	CLX	Compare Y+B	12
04	SS	Masked Substitute Y	8
05	SSX	Masked Substitute Y+B	12
06	CM	Masked Compare Y	8
07	CMX	Masked Compare Y+B	12
10	EU	Enter AU, Y	8
11	EUX	Enter AU, Y+B	12
12	EL	Enter AL, Y	8
13	ELX	Enter AL, Y+B	12
14	LA	Add Y, 18 bit	8
15	LAX	Add Y+B, 18 bit	12
16	LS	Subtract Y, 18 bit	8
17	LSX	Subtract Y+B, 18 bit	12
20	AA	Add Y, 36 bit	12
21	AAX	Add Y+B, 36 bit	16
22	AS	Subtract Y, 36 bit	12
23	ASX	Subtract Y+B, 36 bit	16
24	MP	Multiply Y	26-48
25	MPX	Multiply Y+B	30-52
26	DV	Divide, Y	48
27	DVX	Divide, Y+B	52
30	IR	Indirect RJ, Y	12
31	IRX	Indirect RJ, Y+B	16
32	EB	Enter B, Y	12
33	EBX	Enter B, Y+B	16
34	JP	Jump, Y	4
35	JPX	Jump, Y+B	8
36	EBK	Enter B, U	8
37	MBK	Modify B, U	12
40	SZ	Store Zero, Y	8
41	SZX	Store Zero, Y+B	12
42	SB	Store B, Y	12
43	SBX	Store B, Y+B	16
44	SL	Store AL, Y	8
45	SLX	Store AL, Y+B	12
46	SU	Store AU, Y	8
47	SUX	Store AU, Y+B	12
51	IOR	Inclusive OR, Y	8
52	LPR	Logical Product, Y	8
53	XOR	Exclusive OR, Y	8
54	IJR	Indirect Jump (RIL), Y	8
55	IJP	Indirect Jump, Y	8
56	BSK	B Skip, Y	16
57	XSK	Index Skip, Y	12
60	ZJU	Jump AU Zero, Y	4
61	ZJL	Jump AL Zero, Y	4
62	VJU	Jump AU Not Zero, Y	4
63	VJL	Jump AL Not Zero, Y	4

Code	Symbol	Description	Time μs
64	PJU	Jump AU Positive, Y	4
65	PJL	Jump AL Positive, Y	4
66	NJU	Jump AU Negative, Y	4
67	NJL	Jump AL Negative, Y	4
70	ELK	Enter AL, U	6
71	AKL	Add U, 12 bits	6
72	SIC	Store ICR, Y	8
73	BJP	B Jump, Y	12
74	SAD	Store Address, Y	8
75	SSR	Store SR, Y	8
76	RJP	Return Jump, Y	8
5011	INP	Initiate Input Buff, k	20
5012	OUT	Initiate Output Buff, k	20
5013	EXF	Initiate Ext Function Buff, k	20
5015	TIN	Force Term Input, k	4
5016	TOU	Force Term Output, k	4
5017	TFN	Force Term Ext Function, k	4
5020	SRM	Set Resume ff (Intercomp)	4
5021	SKI	Skip Input Inact, k	6
5022	SKO	Skip Output Inact, k	6
5023	SKF	Skip Ext Function Inact, k	6
5024	WFI	Wait for Interrupt	4
5026	FSO	Force Output One Word, k	4
5027	FSF	Force Ext Function One Word, k	4
5030	RIL	Enable All Interrupts	4
5032	RXL	Enable Ext Interrupts	4
5034	SIL	Set Interrupt Lockout	4
5036	SXL	Set Ext Interrupt Lockout	4
5041	RSU	Shift AU Right, k	4+ .67k
5042	RSL	Shift AL Right, k	4+ .67k
5043	RSA	Shift A Right, k	4+ .67k
5044	SFA	Scale A Left, k, SF	8+ .67n
5045	LSU	Rotate AU Left, k	4+ .67k
5046	LSL	Rotate AL Left, k	4+ .67k
5047	LSA	Rotate A Left, k	4+ .67k
5050	SKK	Skip Console Key, k	6
5051	SNB	Skip No Borrow	6
5052	SOV	Skip Overflow	6
5053	SNV	Skip No Overflow	6
5054	SOP	Skip L(AU,AL) Odd Parity	6
5055	SEP	Skip L(AU,AL) Even Parity	6
5056	STP	Stop Console Key, k	4
5057	SNR	Skip Resume ff (Intercomp)	6
5060	RND	Round AU	6
5061	CPL	Complement AL	6
5062	CPU	Complement AU	6
5063	CPA	Complement A	6
5072	EIC	Enter ICR, k	4
5073	ESR	Enter SR, k	4

SOFTWARE

PROGRAMMING AIDS

Programming Manual
Mnemonic Assembler
Polycode Assembler
Floating Point Package
Function Evaluation Routines
Utility Routines
Debugging Routines
Simulators

MAINTENANCE AIDS

Maintenance Manuals
Diagnostic Routines

First with rugged mobile systems . . .

UNIVAC

DIVISION OF SPERRY RAND CORPORATION

For high computational ability . . . plus rugged, compact construction . . . plus current availability . . . get the full details on the UNIVAC 1218 Military Computer. UNIVAC systems engineers will plan a hardware configuration to fit your system needs.

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