

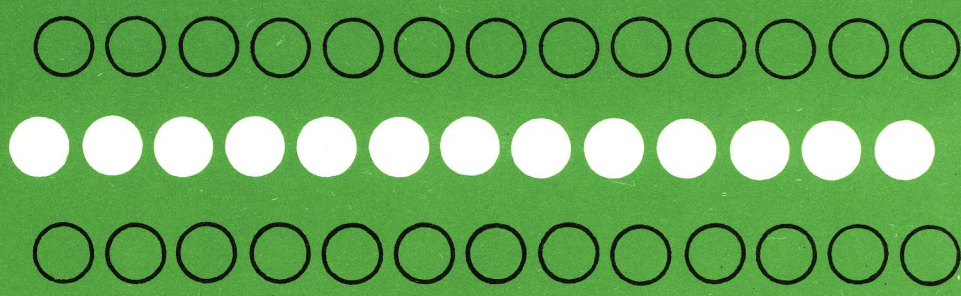
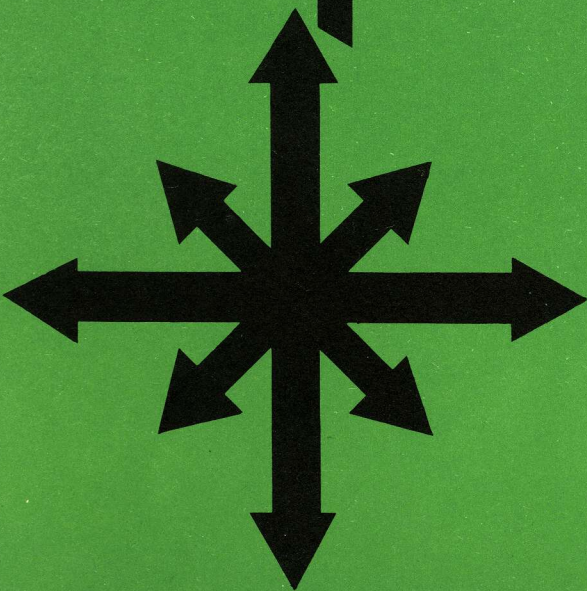
UNIVAC®

1218

MILITARY
COMPUTER



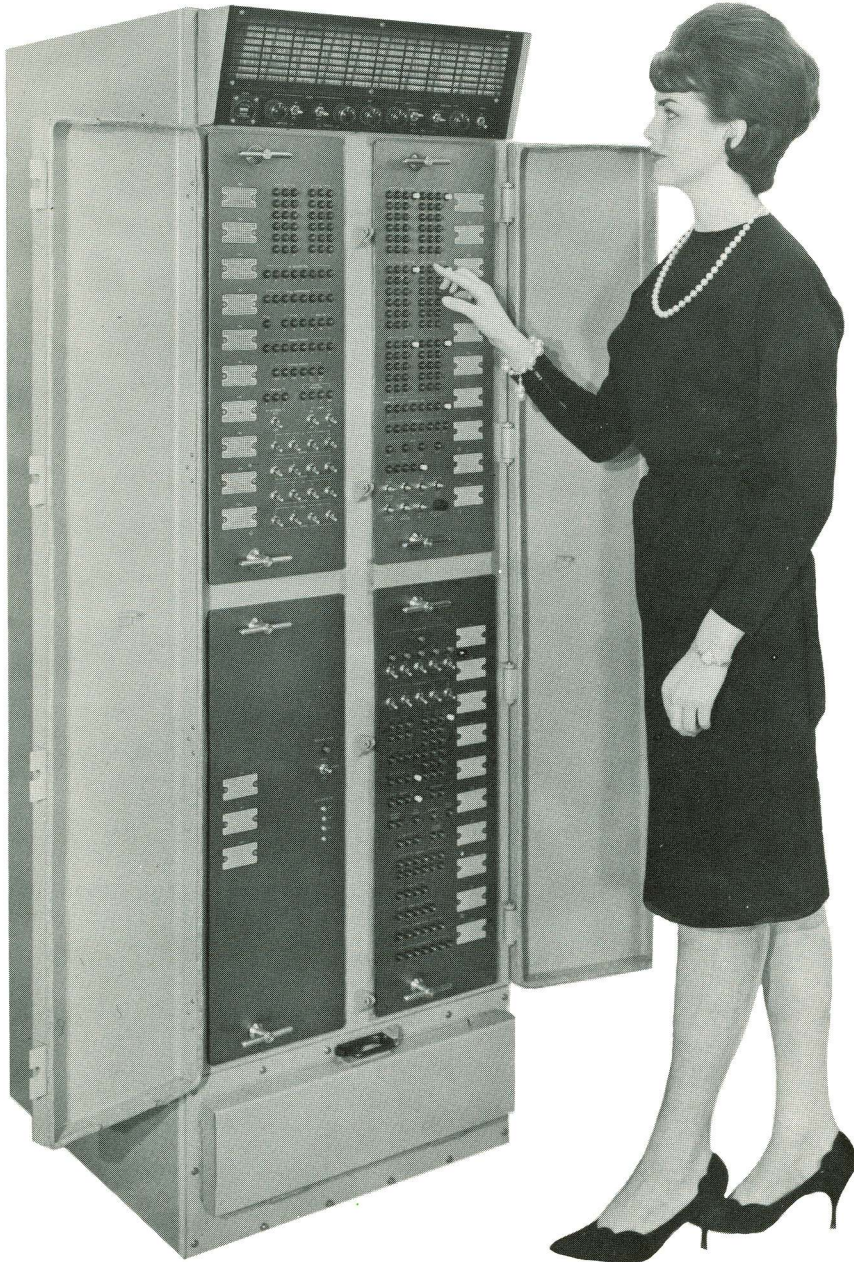
GENERAL DESCRIPTION



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

Depth: 24½ inches

Width: 22¾ 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:

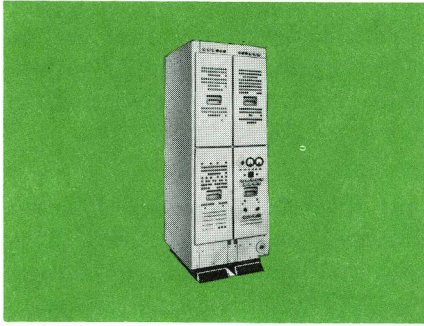
System Analysis — Total capability of a highly competent staff is available to users for problem analysis, equipment specification, mathematical modeling, or operational support for any application.

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, check-out, 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.

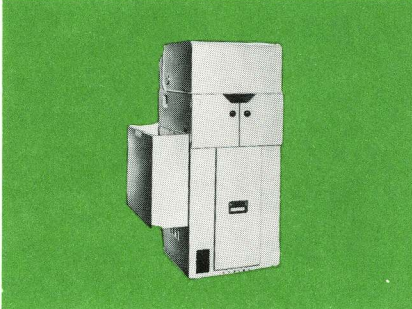
PERIPHERAL DEVICES



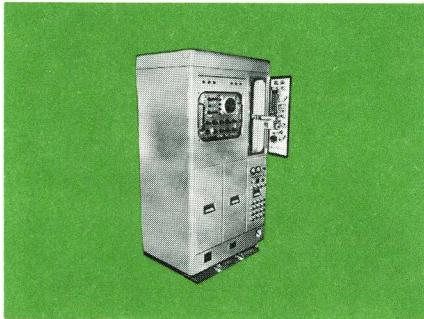
TELECOMMUNICATIONS
TERMINAL



KEYSET CENTRAL



PAPER TAPE
EQUIPMENT



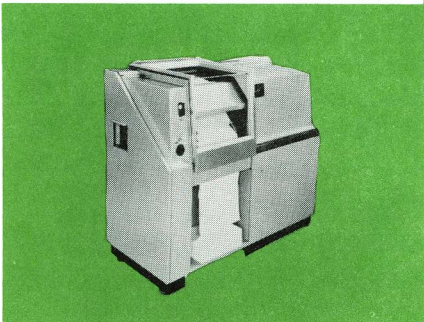
VIDEO PROCESSOR



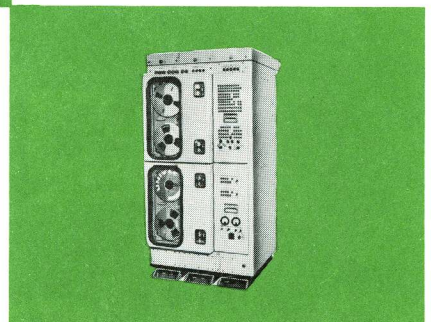
UNIVERSAL KEYSSET



TELETYPEWRITER SET



LINE PRINTER



MAGNETIC TAPE
SYSTEM

REPertoire OF INSTRUCTIONS

| Code | Symbol | Description | Time μ s |
|------|--------|------------------------|--------------|
| 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 μ s |
|------|--------|--------------------------------|--------------|
| 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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