Matching the controller to your application is the problem and the ATRON 601 is the answer. It lets you select from a comprehensive set of standard, pluggable assemblies to configure low-cost, programmable controllers shaped to fit your application.

Controller packages designed from these assemblies are

**LOW COST** because they
- are constructed from standard assemblies produced in large volume
- require low system development cost
- eliminate wasted capability

**PROGRAMMABLE**
- with comprehensive instruction repertoire
- to adapt to changing applications inexpensively

**HIGH PERFORMANCE** with
- 260 nanosecond Processor
- 200 nanosecond Program Memories
- 1 microsecond Main Memories

**FIELD MODIFIABLE** and **FIELD EXPANDABLE** because
- Program Assemblies can be modified
- standard bus interfaces allow easy field-substitution or addition of assemblies.
From our complement of processor, program memory, main memory, and support assemblies, you can now design application-tailored packages for

**PERIPHERAL CONTROL**
- **INCREASE** mainframe throughput by verifying, formatting and translating in the 601
- **CONTROL** remote peripherals by installing communication capability
- **PROVIDE** interface control by the Read Only Memory
- **CHANGE** systems readily for RPQ's
- **MINIMIZE** interface hardware
- **REDUCE** cost of spares

**COMMUNICATION CONTROL**
- **RECOGNIZE** line control characters
- **HANDLE** multiple data codes
- **DETECT** errors (LRC, CRC)
- **MAINTAIN** handshaking capabilities even at 9600 bauds
- **COMMUNICATE** with different central site computers

**MULTIPLEXING**
- **DECREASE** per-unit costs
- **TRANSFER** data in record/blocks if desired
- **VERIFY** and translate codes
- **INTERFACE** mainframe or communications

**PROCESS CONTROL**
- **MONITOR** and control at megacycle rates
- **IMPLEMENT** complex control equations
- **PROGRAM** normalization, summations and limits
- **ADD** communications to central site if desired

**DEDICATED PROCESSING**
- **ELIMINATE** wasted hardware
- **DECREASE** system costs
- **PROGRAM** logic in Read Only Memory

*to fit YOUR APPLICATION...*
Left Shift (R), Fill 0 —— Destination, SET C

Right Shift (R), Fill Sign —— Destination, SET C

Left Shift (R), Fill Sign —— Destination, SET C

Right Shift (R), Fill 1 —— Destination, SET C

Left Shift (S), Fill 0 —— Destination, SET C

Left Shift (S), Fill Sign —— Destination, SET C

Right Shift (R), Fill 1 —— Destination, SET C

Right Shift (R), Fill Sign —— Destination, SET C

Right Shift (R), Fill 0 —— Destination, SET C

Left Shift (S), Fill Sign —— Destination, SET C

Left Shift (S), Fill 0 —— Destination, SET C

See Note 1 to determine Destination.

Note 1: Determining Destination

If D = 0, Result —— Pu, (A) —— P_L

= 1, s

= 2, R

= 3, s and R
THE ATRON SUPPORT CONCEPT

Use Our Support Facilities

Eliminate the need for establishing and maintaining a special staff of technicians and programmers. Atron offers

- design, programming, and maintenance advice from Atron's 601 Support Engineering Staff.
- design, manufacture, and programming of complete or partial systems using 601 Controller assemblies. This may include any or all specialized Interface Assemblies.
- 601 Micro Program Assembler.
- 601 Program Development Support System (PDSS).

Provide Your Own Support

Develop and depend primarily upon your own service facilities. Atron's services are available should a special need arise.

Combine Our Support With Your Own

PROGRAM DEVELOPMENT SUPPORT SYSTEM (PDSS)

The PDSS is a programming and maintenance tool which can be attached to the 601 Controller. When connected, it provides

- alterable, high-speed program memory for the ATRON 601
- an inspect-and-change feature for altering this program memory
- an external peripheral interface to facilitate loading and dumping the program memory before and/or after alteration
- instruction step and break point features with display of all program-addressable registers
- and a maintenance facility for locating hardware faults.

The PDSS is especially useful for full-speed program debugging before the Read Only Memory is programmed. The PDSS also functions as a hardware instruction assembler.
TECHNICAL CHARACTERISTICS

0601-00 Micro-Processor Assembly
- 260 nanosecond execution time (Jumps: 520 nanoseconds)
- 16 Byte Scratch Pad Memory
- +5 volts

0602-00 Transformer Read-Only Program Memory
- Read-Only Core Rope
- Up to 256 16-bit words
- +5 volts

0602-10 Transformer Read-Only Program Memory
- Read-Only Core Rope
- Up to 512 16-bit words
- +5 volts

0602-20 Transformer Read-Only Program Memory
- Read-Only Core Rope
- Up to 1024 16-bit words
- +5 volts

0603-00 Ferrite Core Alterable Memory
- Read/Write Core
- 4K bytes expandable to 16K
- Parity optional

0603-50 MOS Alterable Memory
- Read/Write MOS
- 512 bytes
- 1.5 microsecond cycle time

0603-60 MOS Alterable Memory
- Read/Write MOS
- Up to 1024 bytes
- 1.5 microsecond cycle time
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>0604-00</td>
<td><strong>Read/Write Program Memory</strong></td>
<td>- Read/Write Bipolar</td>
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<tr>
<td></td>
<td></td>
<td>- Up to 256 16-bit words</td>
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<tr>
<td></td>
<td></td>
<td>- 130 nanosecond access time</td>
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<tr>
<td></td>
<td></td>
<td>- +5 volts</td>
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<tr>
<td>0604-10</td>
<td><strong>Read/Write Program Memory</strong></td>
<td>- Read/Write Bipolar</td>
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<tr>
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<tr>
<td></td>
<td></td>
<td>- 130 nanosecond access time</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- +5 volts</td>
</tr>
<tr>
<td>0605-00</td>
<td><strong>Maintenance Console</strong></td>
<td>- Instruction hold/step</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Phase step clocking</td>
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<tr>
<td></td>
<td></td>
<td>- ROM read feature</td>
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<tr>
<td></td>
<td></td>
<td>- Register monitoring</td>
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<tr>
<td>0606-XX</td>
<td><strong>Interconnect Assemblies</strong></td>
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<td></td>
<td><strong>Accommodate</strong></td>
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<tr>
<td></td>
<td>- Micro Processor Assembly</td>
<td>- Memory</td>
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<td></td>
<td>- Read-Only Program Memories</td>
<td>- Optional Power Supply Assemblies</td>
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<tr>
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<td>- Interface Adaptor Assemblies</td>
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<tr>
<td>0607-XX</td>
<td><strong>Power Supply Complement</strong></td>
<td>- Basic Power Supply, 0607-00</td>
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<td></td>
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<td>- MOS Power Supply, 0607-20</td>
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<td></td>
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<td>- Ferrite Core Power Supply, 0607-10</td>
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<tr>
<td>0608-00</td>
<td><strong>Priority Interrupt Assembly</strong></td>
<td>- Up to 32 Interrupts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Automatic Instruction Counter Storage</td>
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<tr>
<td></td>
<td></td>
<td>- Automatic Processor Interrupt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- +5 volts</td>
</tr>
</tbody>
</table>
ATRON 601 Controllers

They're the coming thing. We've got them NOW.

Low-cost microprogrammed modular assemblies to fit your application.

See us at the New York IEEE Exposition March 22-25, Booths 2729-31
# 600 SERIES CONTROLLER

<table>
<thead>
<tr>
<th>TYPE NUMBER</th>
<th>PRODUCT NAME AND DESCRIPTION</th>
<th>PURCHASE PRICE</th>
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</thead>
<tbody>
<tr>
<td>0601-00</td>
<td>Micro Processor</td>
<td>395</td>
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<tr>
<td>0602-20</td>
<td>Transformer Read Only Memory - 1024 Words, 16 Bit</td>
<td>445</td>
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<tr>
<td>0603-00</td>
<td>Ferrite Core Alterable Memory - 4096 Bytes, 8 Bit</td>
<td>1325</td>
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<td>0603-10</td>
<td>Ferrite Core Alterable Memory - 2nd 4096 Bytes</td>
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<td>0603-20</td>
<td>Ferrite Core Alterable Memory - 3rd or 4th 4096 Bytes</td>
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<td>0603-50</td>
<td>MOS Alterable Memory - 512 Bytes, 8 Bit</td>
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<td>MOS Alterable Memory - 1024 Bytes, 8 Bit</td>
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<td>0606-00</td>
<td>Interconnect 12 Card</td>
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<td>0606-10</td>
<td>Interconnect 6 Card</td>
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<td>0606-20</td>
<td>Interconnect 18 Card</td>
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<td>0607-00</td>
<td>Basic Logic PowerSupply</td>
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<td>Logic and Core Memory Power Supply</td>
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<td>0607-20</td>
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<td>0608-00</td>
<td>Priority Interrupt Assembly</td>
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<td>0604-00</td>
<td>Read/Write Program Memory - 256 Words, 16 Bit</td>
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<td>Read/Write Program Memory - 512 Words, 16 Bit</td>
<td>2090</td>
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<td>Read/Write Program Memory - 1024 Words, 16 Bit</td>
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<tr>
<td>0605-00</td>
<td>Maintenance Console</td>
<td>950</td>
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Subject to Change
Effective 3-1-71