If You Liked Our 2901, You'll Love Our 2903!

Same Powerful Architecture:

- 16 Working Registers in 2-address architecture
- Left-Right shift of Data after ALU
- Auxiliary Register for multiple-length operations
- Expandable to any word length in multiples of four bits
- Carry, Overflow, Zero, and Negative Status Flags

Plus These Added Features:

- Two's Complement and Unsigned Multiply
  The Am2903 performs both signed and unsigned multiplication without requiring any additional hardware. For unsigned n x n-bit multiply, a single microinstruction is repeated n times. For a two's complement multiply, a single microinstruction is executed n-1 times, and a second microinstruction is executed once. Both kinds of multiplies produce 2n bit products.
- Two's Complement Divide
  The Am2903 performs a signed division using a non-restoring algorithm. A 2n bit dividend is divided by an n-bit divisor in n cycles (after justification). An n-bit signed quotient and n-bit signed remainder are produced. Extension to multiple length division is simple. No extra hardware is needed.
- Single and Double Length Normalization
  Both single length words and double length words can be normalized; i.e., shifted up to remove leading zeros or ones. During the normalize instructions, the Am2903 provides special flags signaling the completion of normalization.
- Conversion Between Sign-Magnitude and Two's Complement Notations
  On a single cycle, the Am2903 will switch a word from one notation to the other.
- Increment by One or Two
  On a single cycle, the Am2903 can add either 1 or 2 to a word, depending on carry-in.

If You Didn't Like Our 2901, You'll Love Our 2903!

- Two Data Input Ports
  The Am2903 can operate between any two internal registers, any internal register and an external data bus, or two external data buses.
- Expandable Register File
  The Am29705 hooks directly onto the Am2903 to provide *any number* of working registers, without losing the two-address architecture. You can even go to a three-address system, where on one cycle you operate on two registers and place the result in a third.
- Arithmetic *and* Logical Shifts
  Arithmetic shifts hold the MSB (sign bit) in place and shift the rest of the word *around* the MSB. Logical shifts shift all the bits in the word. The 2903 provides both types of shift.
- Sixteen-Function ALU
  Provides 9 Logic Functions and 7 Arithmetic Functions, twice as many functions as the 2901.
- Parity Generated Internally
  A Parity Generator operates on the ALU output and is cascaded between devices, so that a single pin contains parity across the entire ALU output.

And If You Don't Quite Like Our 2903, You'll Definitely Love Our Am29203!

- BCD Arithmetic
  The Am29203 includes special functions for BCD add and subtract, as well as conversion between binary and BCD notations.
- A Byte Better
  The Am29203 is designed to efficiently handle byte operations with a minimum of external logic.
- Both Data Lines Bidirectional
- Decrement by 1 or 2 Instruction
- RAM is enabled only if instruction execution is enabled.

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- Improved Byte
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