

The 2C87 Advanced Math CoProcessor from Integrated Information Technology is a high-performance numeric coprocessor for 286-based systems. In addition to 100% compatibility with industry standards, the 2C87 provides the most advanced features available for speed, reliability and power savings.

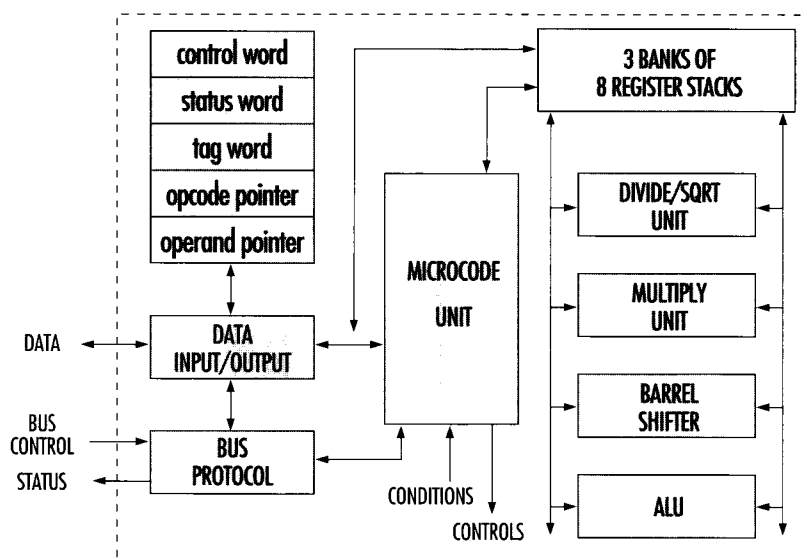
The device's unique architecture can execute numeric operations in far fewer clock cycles than competing devices. The 2C87 also features an innovative hard-wired

4x4™ matrix transformation function which can speed graphics operations and CAD/CAE applications by two to five times.

IIT's 2C87 provides these advanced features and performance in a low-power CMOS implementation which consumes 25% less power than competing devices, with a corresponding improvement in reliability. Moreover, all IIT coprocessors are backed by excellent customer service, a dedicated technical support team, and a warranty for the lifetime of the system.

### FEATURES

- Guaranteed 100% compatibility with 286 systems and software
- High performance 80-bit internal architecture
- State-of-the-art CMOS implementation consumes 25% less power than other devices
- Built-in instruction speeds 4x4 matrix transformations by 3x
- 24 data registers, 80-bit wide, user accessible as 3 banks of 8 register stacks
- Backward software-compatible with all 8087 object code
- Full support for the ANSI/IEEE standard for binary floating point arithmetic
- Full range of transcendental operations for sine, cosine, arctangent and logarithm
- Available in 8 MHz, 10 MHz, 12 MHz and 20 MHz clock rates
- Provided in DIP and PLCC packages
- Warranteed for the lifetime of the system



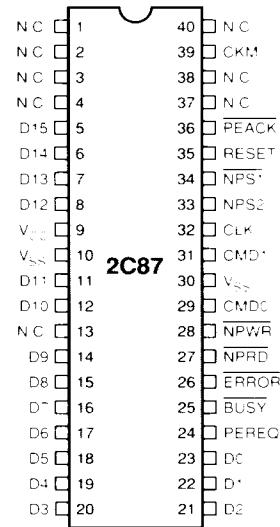
2C87 Block Diagram

## APPLICATIONS

The 2C87 Advanced Math CoProcessor from IIT for is ideal for accelerating:

- Windows operations
- Spreadsheet functions
- CAD/CAE applications
- Graphics generation and manipulation
- Any computation-intensive functions

Also, the 2C87 consumes only 0.7 Watts in typical operation, making it very suitable for portable and other low-power systems.



2C87 Pin Configuration

## ENHANCED PERFORMANCE

The 2C87 Advanced Math CoProcessor from IIT is available in the highest and widest range of speed grades in the industry: 8 MHz, 10 MHz, 12 MHz and 20 MHz. And because the core processing engine executes instructions in fewer clock cycles than competing devices, the 2C87 can operate up to 50% faster in the same application. The table at right compares the range of clock cycles required to perform typical floating point operations.

INSTRUCTION	CLOCK CYCLES REQUIRED		SPEED IMPROVEMENT
	IIT 2C87	INTEL 80287	
ADD	15-17	70-100	4x to 6x
MPY	19	90-145	4x to 6x
DIV	48	193-203	4x
SQRT	49	180-186	3x to 4x
COMPARE	17	40-60	2x to 3x
REM	58	15-190	up to 3x
TAN	196	30-540	up to 3x
LOG	235	900-1100	3x to 5x

## 4x4 MATRIX TRANSFORMATION

The 2C87 features embedded microcode to perform a 4x4 matrix transformation in a single-instruction. Without IIT's unique 4x4 transformation, this operation would require multiple instructions; with it, software applications can realize a speed improvement of 2x to 5x.

The 4x4 matrix transformation is a common numerical operation used to perform functions such as high speed point translation (bit blt), curve generation and coloring by location. It is applicable in most operations that involve projecting, translating, rotating, moving or coloring an image.

INTEGRATED INFORMATION TECHNOLOGY, INC.

2445 Mission College Boulevard  
Santa Clara, CA 95054

U.S.A.

408-727-1885

FAX: 408-980-0432

4x4 and the IIT logo are trademarks of Integrated Information Technology, Inc.  
All other trademarks are registered to their respective companies.  
©1991 Integrated Information Technology, Inc. (IIT)