For Immediate Release

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RECONFIGURABLE SYSTOLIC VIDEO PROCESSING CHIP

TO SUPPORT A WIDE RANGE OF CONSUMER AND BROADCAST APPLICATIONS

A new systolic array processing architecture designed to be reconfigurable to operate in real-time on video at an arithmetic level developed by Intelligent Paradigm, Inc.

April 8, 1999, Cupertino, California -- The integrated circuit market is currently experiencing a phenomenal growth in programmable devices. While programmable parts like FPGAs and DSPs address many applications, they are still not suited to the cost / performance needs of the video processing market. To address the needs of the video processing market, Intelligent Paradigm has developed a new integrated circuit architecture that meets cost / performance requirements, and provides programmable-like flexibility through circuit reconfigurability.

Unlike previous ASIC technologies that address only a single application, market–wide applications can now be addressed with a single reconfigurable device. For this reason, we have coined the term Market Specific Integrated Circuit™ (MSIC™). The market focus of the first MSIC device, the IPM-16, is video processing, and the functions for which it can be used include, but are not limited to: color space conversion, adaptive noise reduction, line doubling, blue–screen keying and compositing, FIR filtering, blending, compression artifact removal, and image enhancement.

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The coming wave of digital video consumer products offers major opportunities for an inexpensive solution for video processing. Intelligent Paradigm's offering is a high performance, low cost, reconfigurable device that addresses this need in consumer electronic products, as well as meeting the requirements for professional broadcast-quality implementations. The IMP-16 can be designed into multiple applications including HDTV, video games, teleconferencing, PC multimedia, video image processing, computer graphics, MPEG authoring, MPEG decoding, filtering, and set-top boxes.

A system designer using MSIC technology can easily configure the flow of data, and processing algorithms, within the chip. In addition to this flexibility, because of the IMP-16's internal precision and processing power, the IPM-16 will often out–perform an ASIC for a given application.

Within an MSIC is a series of function cells that can be configured to implement a variety of algorithms. A given task will typically not consume all the available function cells, allowing the remaining cells to perform other functions. For example, the IPM-16 can be configured to perform color space conversion, and use the remaining cells to perform other operations such as filtering or interpolation. The benefit is that a single IPM-16 can perform operations that would normally require multiple traditional ASICs, yet typically at a cost less than any of the ASICs it replaces. Multiple IPM-16's can be cascaded for increased processing capability. In brief, highlights of the IPM1-16 include:

- Arithmetic level reconfigurable computing
- Real-time systolic operation (up to 240 Msamples/sec)

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- 16 bit per component precision
- Can be cascaded for increased processing capability

Intelligent Paradigm, Inc. is a digital media company with offices in Cupertino, California and Schaumburg, Illinois. Founded in 1996 by George Sheng (CEO) and Brett Bilbrey (CTO), the company aims to establish a new paradigm for digital media with the introduction of MSIC technology. The company has financial backing from several consumer electronics manufacturers and venture capital groups.

More information on the IPM-16 can be found at: http://www.intelligentparadigm.com/MSIC/IPM16/DataSheet.PDF.

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