Tek offers largest CCD imager

Tektronix has announced two new standard silicon Charge Coupled Device (CCD) imagers available through the Integrated Circuits Operation. One, the TK2048M, is the largest known CCD imager in the world. Both are specifically tailored for scientific applications.

A prototype of the TK2048M CCD imager will be demonstrated at the Tek ICO booth at SPIE (International Society for Photo Optical Engineering) in San Diego, Calif., August 18–23.

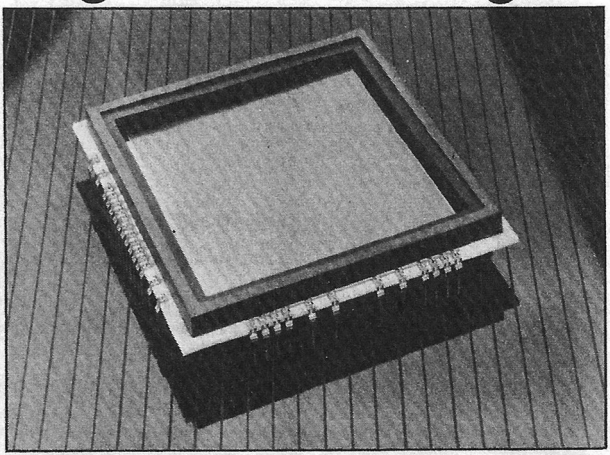
Tek previously made available its CCD processing capability for custom imager design and foundry services.

The TK512M is a 512x512 picture element (pixel) imager. The TK2048M is a 2048x2048 pixel device. Both imagers have square array format, large pixel size with 700,000 electron capacity (27x27 microns), low readout noise (less than 10 electrons RMS), and unique thinning process that gives wide spectral response.

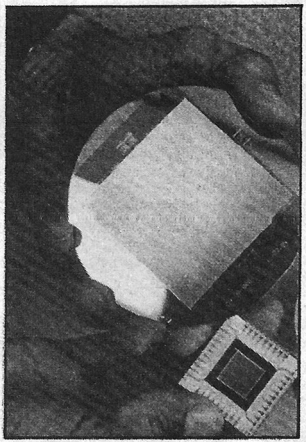
The TK2048M has a 55.3x55.3mm imaging area. The device utilizes VLSI wafer scale integration. It is fabricated using a tri-level polysilicon, buried channel process resulting in low dark current (typically less than 10nA/cm^2 @ 20°C) and high charge transfer efficiency (greater than .99999).

Both devices employ a proprietary thinning process, developed and achieved only by Tektronix, that attains 10 micron thickness, with +/– 1 micron flatness, fully supported from the non-imaging side of the device. This proprietary process makes possible thinned versions of these devices for high quantum efficiency in the ultraviolet spectrum.

The TK512M and TK2048M are geared to high resolution scientific imaging and high speed signal processing applications for the astronomical, medical, machine vision and military markets. For more than three years, Tektronix has been designing and developing state-of-the-art CCD devices for signal processing applications in Tek's own instrument line, using the CCD as a high speed sampler similar to the application in the 7D20 digitizing plug-in for 7000 series lab scopes. Other applications utilize CCDs as an E-beam scanned target for writing traces directly on the device as a "waveform imager." The new imagers are a direct outgrowth of this technology.



A PROTOTYPE of the TK2048M CCD imager will be demonstrated at the Tek ICO booth at the SPIE show August 18–23 in San Diego. It is the largest known CCD imager in the world. Availability begins January 1986.



Price depends on grade, based on number of array defects. Grade 1 devices start at $3,000 for TK512M front-illuminated devices, and $7,000 for back-illuminated devices. Projected delivery time is 12 weeks for TK512M imagers. TK2048M front-illuminated devices start at $40,000 for grade 1. TK2048M devices will be available beginning January 1986.

Tek's Integrated Circuits Operation offers total solution support for IC design and fabrication with high-performance IC foundry services for analog application specific designs, state-of-the art CCDs, and microlithography products and services. A family of QuickChip™ bipolar linear arrays was introduced in May 1985.

TEK'S STANDARD production model CCD (512x512), bottom, is compared with the largest model which contains more than 4 million light sensing points (pixels).