

Signal Processing/Picture Processing Processors

In 1980, Takao Nishitani, et al. at NEC developed μ PD7720, a digital signal processor (DSP). This processor was a 16bit fixed-point system and performed high-speed product-sum operation adopting a hard architecture and using horizontal system microprogramming.

In the 1990s, the high-speed and real-time processing of pictures and motion pictures in addition to speech became a challenge. Tadayoshi Enomoto and Hachiro Yamada, et al. succeeded in the development of BiCMOS LSI with the installation of high-speed product-sum operation and a high-speed floating-point arithmetic circuit. This enabled real-time coding/decoding of video signals. Meanwhile, Mitsuo Saito, et al. succeeded in the development of an emotion engine to process higher speed three-dimensional moving pictures. This processor featured the adoption of a 128bit bath, a total of 10 product-sum operation parts, and 4 dividers/extraction square root calculator. The emotion engine was installed in Play Station 2, the game machine by SONY, and its cumulative total of units sold was 150 million, making it a major hit product.

In the 2000s, along with the start of digital high-definition broadcasting, further high-speed moving picture processing was required. Jiro Naganuma, et al. at NTT developed the technology which enabled the encoding processing and decoding processing of HDTV compliant moving pictures with MPEG-2 on one chip, and this was named VASA and commercialized.

Local Parallel Picture Processors

Masatsugu Kidode, et al., at Toshiba developed the Local parallel picture processor and this technology was commercialized as TOSPIX. The processor featured high-speed parallel arithmetic operation by cutting part of the input picture using local masking and realizing flexible picture operations/fast transfers using a microprogram.